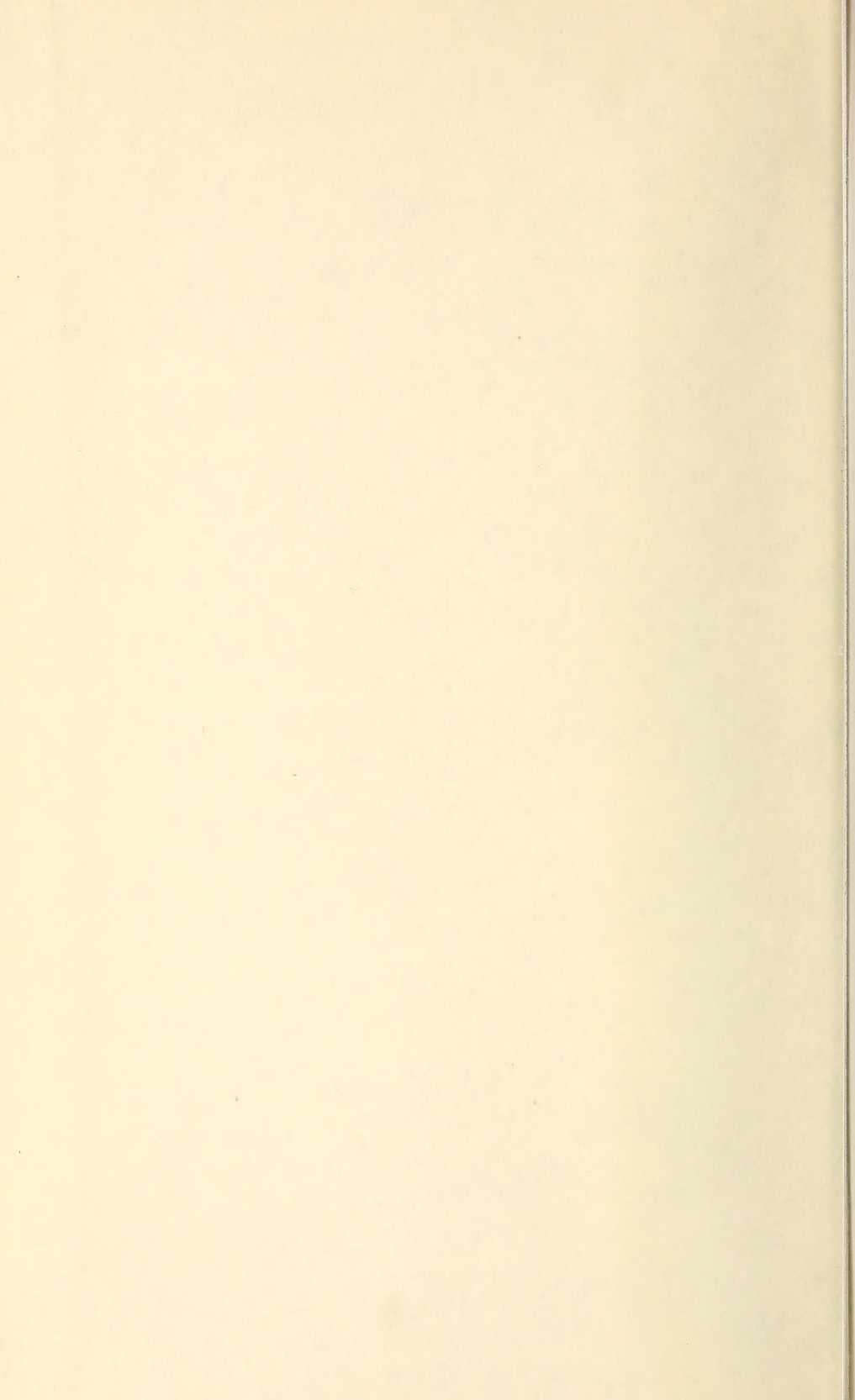
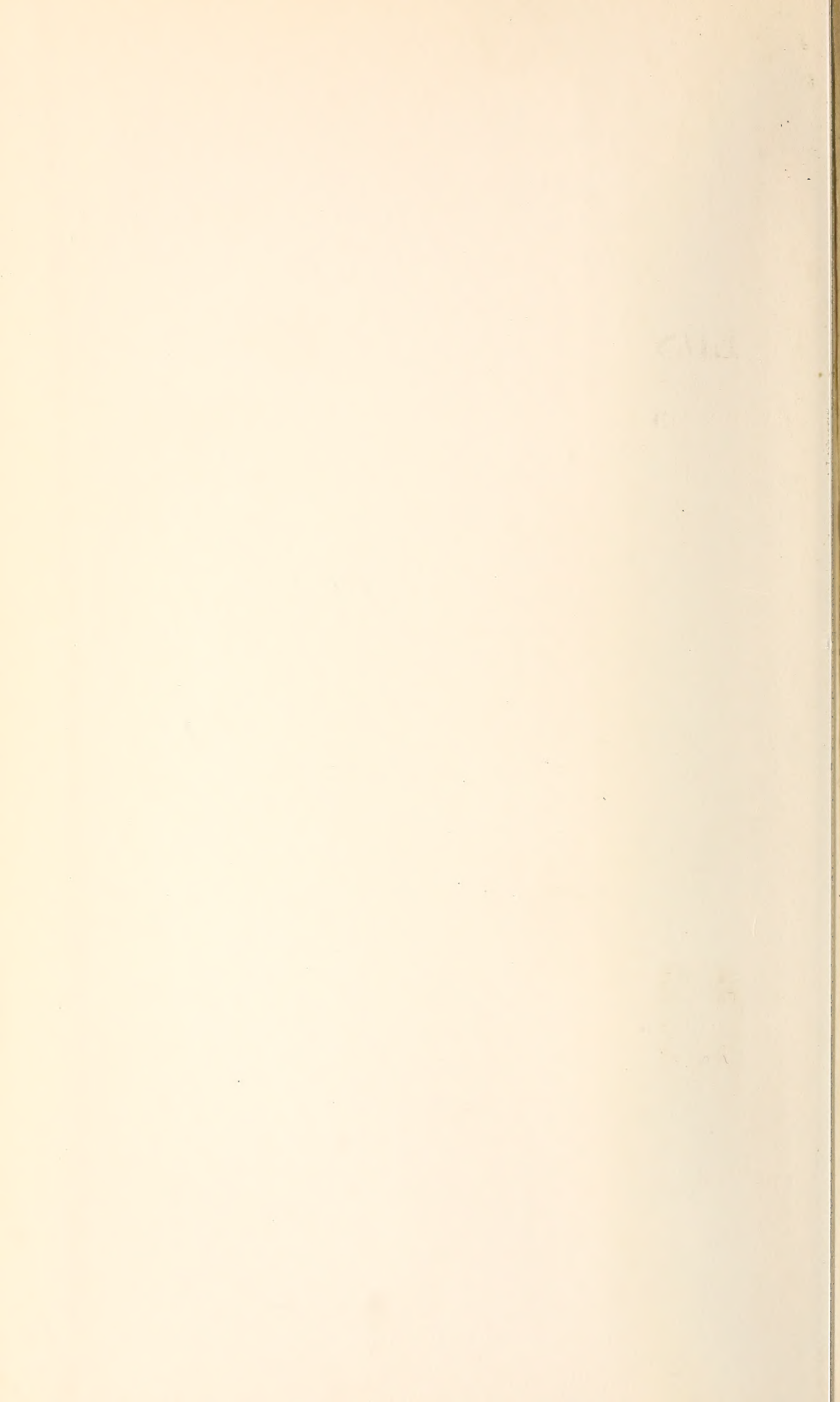










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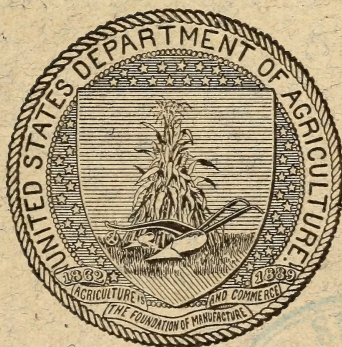
B. T. GALLOWAY, *Chief of Bureau.*

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM OCTOBER 1
TO DECEMBER 31, 1909:

INVENTORY No. 21; Nos. 26048 to 26470.

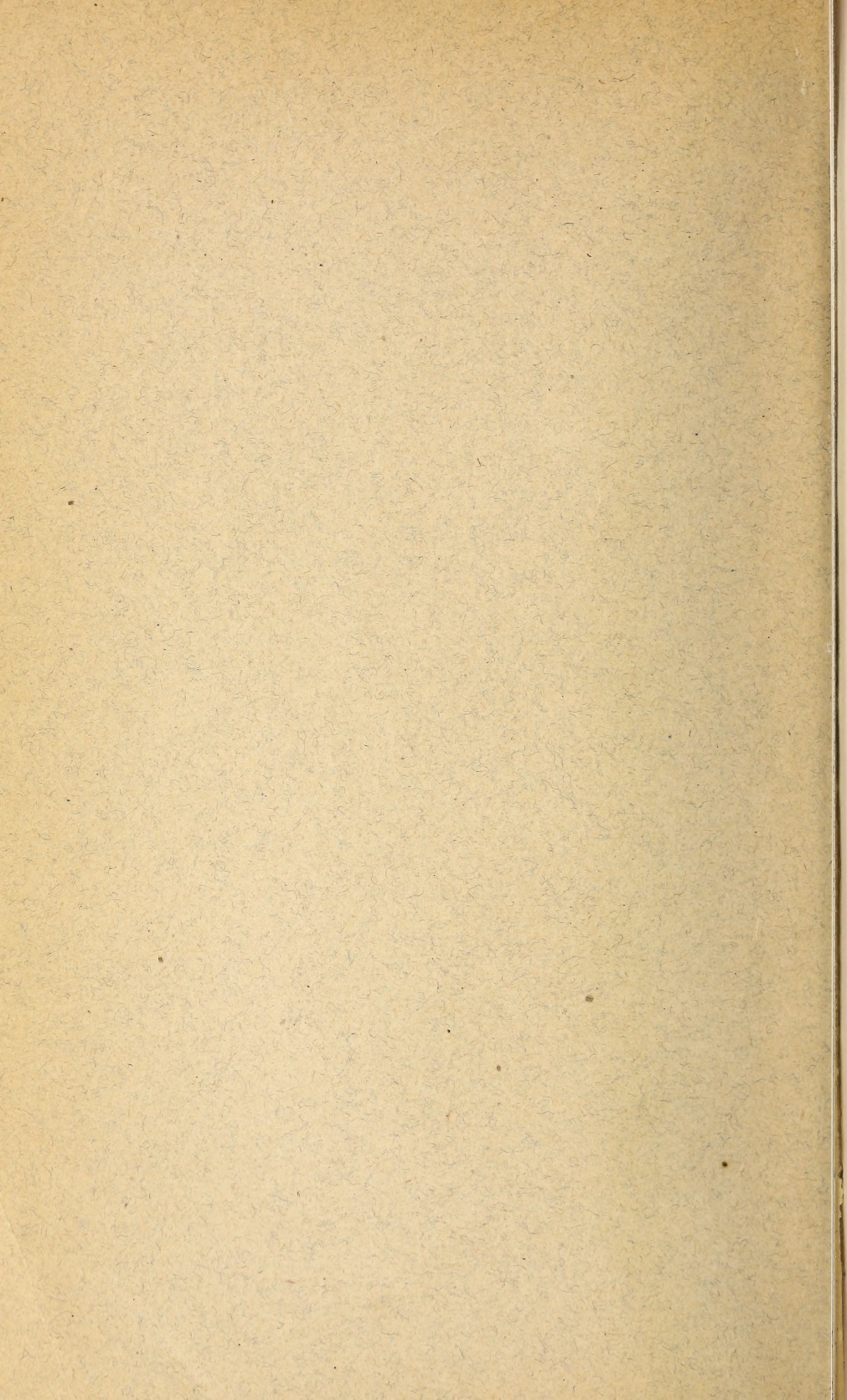
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WASHINGTON:

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1911.



U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 205.

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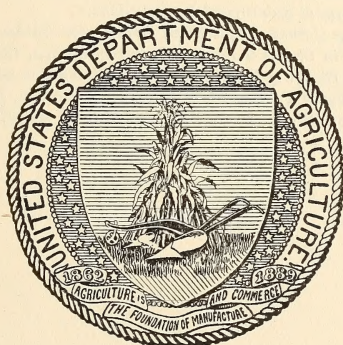
Mr. Harlan.

SEEDS AND PLANTS IMPORTED

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1911.

BUREAU OF PLANT INDUSTRY.

Chief of Bureau, BEVERLY T. GALLOWAY.

Assistant Chief of Bureau, WILLIAM A. TAYLOR.

Editor, J. E. ROCKWELL.

Chief Clerk, JAMES E. JONES.

FOREIGN SEED AND PLANT INTRODUCTION.

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Edward Goucher, John H. Allison, W. H. F. Gomme, and Roy F. Mann, *Experts*.

LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., October 31, 1910.

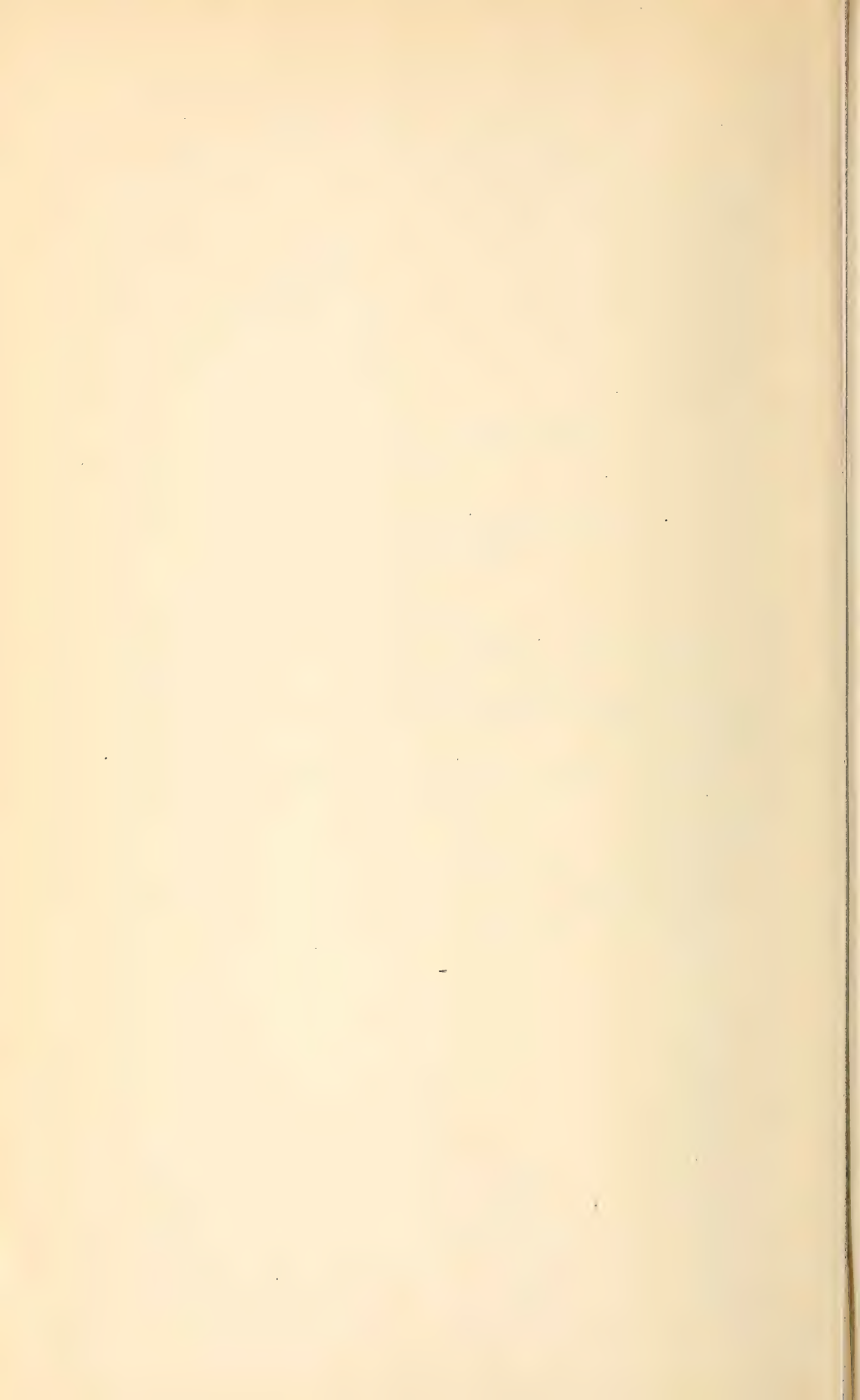
SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 205 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported During the Period from October 1 to December 31, 1909: Inventory No. 21; Nos. 26048 to 26470."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

G. H. POWELL,
Acting Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.



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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM OCTOBER 1 TO DECEMBER 31, 1909: INVENTORY NO. 21; NOS. 26048 TO 26470.

INTRODUCTORY STATEMENT.

Although our agricultural explorer Mr. Frank N. Meyer has been in the field during the period covered by this inventory, the material received from him which is herein recorded is but a small part of the work performed by him. He has been investigating the prevalence of the crown-gall disease of the apple in France for the purpose of ascertaining whether the French have resistant stocks; making studies in the English, French, German, and Russian arboreta for the purpose of familiarizing himself with the important plants and plant cultures of Chinese Turkestan, which region it is expected he will explore this summer; and he has been unexpectedly delayed for six weeks in St. Petersburg. This office is negotiating by correspondence for the valuable material he has reported in the different arboreta.

To the fruit growers the question of better stock plants is of great importance and is being emphasized more strongly now than ever before. To such as are working on the problem, the introduction from Palestine, through Mr. Aaron Aaronsohn, of a large red-fruited variety of haw, *Crataegus azarolus* (Nos. 26116 and 26354), will be interesting. It has been used successfully both in Tunis and Palestine and is considered by Mr. Aaronsohn to be an ideal stock for dwarf early pears in our arid irrigated regions of the Southwest, where the question of growing early pears is attracting attention. A species of *Photinia* (No. 26133) from western China is sent in by Mr. Meyer, who suggests its use as a possible stock for the loquat.

The possibility of using the Chinese brambles for the production of new types of raspberries has been pointed out as promising. For those interested in this field, nine species of *Rubus* from the Yangtze Valley (Nos. 26270 to 26278), collected by Mr. E. H. Wilson, of the Arnold Arboretum, are likely to prove of very considerable interest.

The problem of growing in this country the large-fruited English gooseberry has proved difficult to solve because of the gooseberry mildew to which all English gooseberry varieties seem subject. Those interested in this fruit will be glad to test Dr. W. Van Fleet's three new hybrids between *Ribes missouriense*, *R. cynosbati*, and *R. rotundifolium* crossed by *R. reclinatum*. These represent twelve years of careful work in selection from hundreds of seedlings from various crosses, and preliminary tests have shown them remarkably resistant to the gooseberry mildew. (Nos. 26138 to 26140.)

Feijoa sellowiana (Nos. 26120 and 26121) is a new fruit from Uruguay which is attracting some attention in California and Florida, since it is said to withstand more cold than the guava and to have a unique flavor of its own which is especially relished by many. An acid-fruited species of *Psidium laurifolium* (No. 26413), from Trinidad, will interest those who believe in the future of the guava and its jelly-making qualities, since it is said to jelly much quicker than the common West Indian varieties and, quite distinct from them, to have an agreeable acidity.

To the Florida and California fruit growers who are watching the possibilities of the anonas, the introduction of eight large-fruited, smooth-skinned varieties from Chile will be of interest. (Nos. 26148 to 26155.)

The loganberry is already well known in the United States and those who realize its value will doubtless wish to test the lowberry (No. 26197) and Low's Phenomenal raspberry-loganberry hybrid (No. 26198), which are said to be new rivals of the loganberry.

Those who are experimenting with forage plants will be interested in a new importation of shaftal, *Trifolium suaveolens*, from Tashkend (No. 26135), a clover which is being given a thorough trial in the irrigated regions of the Southwest. Although normally an annual, this species behaves as a perennial if regularly cut for hay. The Wallaby grass, *Danthonia semiannularis*, from New Zealand (No. 26119), is recommended especially for heavy clay soils or gumbo lands subject to drought; and ray-grass, *Lolium strictum* (No. 26200), coming from the dry regions along the Mediterranean, is recommended by the veteran experimenter, Doctor Trabut, of Mustapha, Algiers, as being an excellent forage grass, an annual worthy of cultivation in the Southwest; while the New Zealand rice-grass, *Microlaena stipoides* (No. 26118), may find a use in America for pasture or lawn purposes.

Potato breeders have already shown an interest in the introduction of a few tubers of a species of *Solanum* thought to be a wild hybrid of *Solanum tuberosum* (No. 26122), which has been used by Mr. Paton, of Scotland, to originate what he believes are varieties practically immune to the potato blight, *Phytophthora infestans*. Interesting

varieties have also been introduced from Bogota, Colombia (Nos. 26126 to 26129).

The Arracacia of South America forms a staple food of the Venezuelans, who know it under the name of apio. It is cultivated in high altitudes and requires a long season in which to mature. It deserves a thorough trial in the South to determine where it will succeed. (No. 26204.)

The destructive fungous disease of the chestnut, which threatens to destroy the native chestnut trees of the Atlantic coast region, makes the production of a chestnut-chinquapin hybrid of unusual interest, since its resistance to this bark disease may furnish a way out of a situation which seriously threatens the chestnut industry. Doctor Van Fleet's hybrids (Nos. 26230 to 26235) have so far shown a high degree of immunity to the disease.

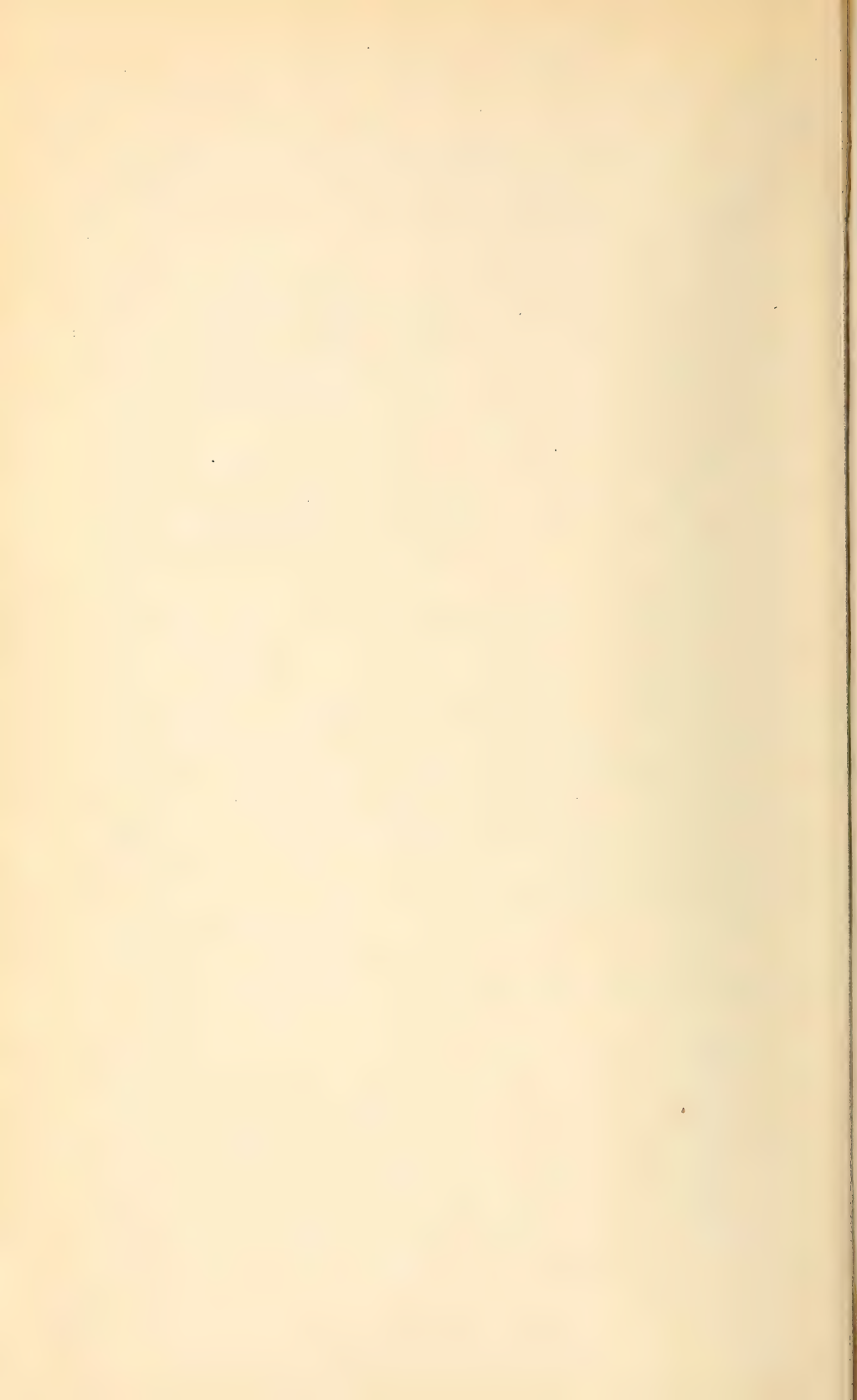
The interest in the Japanese flowering cherry trees, which have been found to succeed well in the United States, makes it worth while to call attention to seven Chinese flowering cherry trees from the Yangtze Valley, collected by Mr. E. H. Wilson, of the Arnold Arboretum. (Nos. 26246 to 26252.)

For many years attempts have been made to introduce the cliff-grown tea and the teas from the Dragon Pool, of the Kienningfu and Wuishan districts of China, but without success. Through the kind assistance of Mr. Rockhill, ambassador to Russia, formerly American ambassador to China, and the hearty cooperation of the American consul and vice-consul at Foochow, fourteen varieties of these specially noted teas have been introduced and are being propagated.

As heretofore, the work of identification and nomenclature, as well as that on the geographical distribution, has been done by Mr. H. C. Skeels under the supervision of Mr. W. F. Wight, of the Office of Taxonomic and Range Investigations, and the manuscript has been prepared by Miss Mary A. Austin.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., March 7, 1910.



INVENTORY.

26048 and 26049. PRUNUS spp.

From the Himalayas. Presented by Mr. E. Shearer, Assistant Inspector-General of Agriculture in India, Nagpur, Central Provinces, India. Received October 2, 1909.

Seeds of the following:

26048. PRUNUS ARMENIACA L.

Apricot.

"*Shari*. A nursery of shari plants is prepared in January each year. The soil is first dug, properly cleaned, and manured; ditches are then made about 4 inches deep and the seeds are put in and covered with earth. These seeds germinate in the following March.

"These plants are then transplanted where desired in January next, i. e., after one year. They are planted in pits dug deep enough and are watered every second or third day until they take root in the ground. Shari plants when grafted with aru (peach) give a better variety of shari fruit." (*Shearer*.)

26049. PRUNUS sp.

Plum.

"*Aloocha*. The season and process of sowing this seed are the same as that of shari (apricot) (S. P. I. No. 26048).

"Jamun (wild cherry) and aru (peach) when grafted on aloocha plants produce fine varieties of jamun and aru, respectively." (*Shearer*.)

26050. ALEURITES TRISPERMA Blanco.

Banucalag.

From Philippine Islands. Presented by Mr. Elmer D. Merrill, Bureau of Science, Manila. Received October 2, 1909.

"As there are probably no live specimens of this species in America to-day, these seeds were procured to grow plants for trial in the tropical possessions of the United States. A portion of them will also be used for the expression of a sample of oil to be tested in the Bureau of Chemistry of the United States Department of Agriculture in Washington in comparison with oils derived from other species of *Aleurites*.

"This species, which yields a valuable drying oil, is found in the Philippines; so far as known, it is restricted to these islands and is comparatively rare but quite generally distributed. This plant is botanically known as *Aleurites trisperma* Blanco, but carries also the synonym *Aleurites saponaria* Blanco. It is known locally as 'banucalag,' 'lumbang banucalag,' 'lumbang banucalad,' 'baguilumban,' 'calumban,' or 'lumbang gubat,' besides having a variety of other names in the different provinces. It is much mixed and confused with the true lumbang (*Aleurites moluccana*), especially when information in regard to it is sought.

"*Aleurites trisperma* belongs to the same section of *Aleurites* as the Chinese and Japanese species; this may readily be seen by comparing the seeds and foliage of these three plants. The seeds resemble those of *Aleurites fordii*, while the leaves resemble those of *Aleurites cordata*. The seeds are somewhat larger, however, than those of the China wood-oil tree, besides being thicker shelled and of a distinct brick-red color." (*W. Fischer*.)

26051 to 26054. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

From Nanking, China. Presented by Dr. F. B. Whitmore. Received September 13, 1909. Numbered October 4, 1909.

Seeds of each of the following:

26051. Yellow.

26053. Green.

26052. Yellowish green.

26054. Black.

26055 to 26061. SACCHARUM OFFICINARUM L. Sugar cane.

Presented by Mr. Edward W. Knox, general manager of the Colonial Sugar Refining Company (Limited), Sydney, New South Wales, Australia. Received October 4, 1909.

Seeds of each of the following; notes by Mr. Knox:

26055. *Striped Singapore*. "Standard variety, medium thickness, medium quality. Very similar to Rose Bamboo, but striped amber and red."

26056. *Rose Bamboo*. "Standard variety, medium tonnage and sweetness, medium thickness, straw-rose color."

"These are at present most grown in the drier districts of Fiji, being of very fair weight and sweetness. According to Mr. J. Clark (one of our officers who recently paid a visit to Demerara and Barbados) Striped Singapore is the striped variant of the cane called White Transparent in the West Indies; Rose Bamboo is an allied cane which is very nearly identical with White Transparent, the latter being called Yellow Singapore in Fiji. The obvious difference between Rose Bamboo and Yellow Singapore is that the latter is somewhat thicker in the stalk and arrows very freely, while the former rarely flowers."

26057. *Badila*. "Best variety in Fiji and Queensland. Very heavy and very sweet, thick, purple."

26058. *Mohona*. "Early maturing, successful variety in New South Wales, but dies off early in the season in tropical Queensland and Fiji; rather thin, purple; white bloom."

"These have been obtained from New Guinea. *Badila* is a dark-purple cane of stout build, giving heavy and sweet crops under favorable conditions, but being a slow grower at the start. *Mohona* is of a lighter purple color, of medium size and yield, attaining high sweetness when comparatively young, readily going back in quality in the Tropics, but much more enduring in semi-tropical districts. It supplies very fertile seeds."

26059. *HQ. 10*. "Fairly sweet variety, fair tonnage, seedling raised from *Mohona* by Mr. J. Clark at Hambleton, Queensland. Thin, olive-green."

26060. *HQ. 50*. "Seedling raised from *Mohona*; rather thin, purple; white bloom; good cropper; good quality; raised at Hambleton, Queensland."

"These are both sweet and have given fair crops so far when tried on small areas only."

26061. *Couvé 87*. "This is a thick, purple Mauritius seedling, giving a heavy crop, which is somewhat discounted by shortcomings as regards quality. Seed from this variety is more fertile than that from any other known by us."

26062 to 26065. MUSA TEXTILIS Née. Manila hemp.

From Davao, Mindanao, Philippine Islands. Presented by Mr. M. M. Saleeby, in charge of fiber plants, Bureau of Agriculture, Manila, through Mr. Lyster H. Dewey. Received October 4, 1909.

26062 to 26065—Continued.

Seeds of each of the following:

26062. *Tanguyon* (also spelled *Tangouan* and *Tongongon*).

26063. *Libuton*.

26064. *Puteean*.

26065. *Arupan*.

"Mr. Saleeby, who is making a careful study of abacá (Manila hemp), writes that although abacá seedlings are often found in the fields in well-shaded moist places, he has never found good plants growing directly from the seeds. He suggests trying to grow plants from root cuttings or suckers from the seedlings that we may secure. He also states that he finds seedlings only in soil well drained yet constantly moist and constantly shaded. I would suggest that these seeds be grown with a view to sending the young plants to Porto Rico." (*Dewey*.)

26067. BETA VULGARIS L.**Beet.**

From Sicily. Presented by Dr. Carl Sprenger, Hortus Botanicus Vomerensis, Vomero, Naples, Italy. Received October 5, 1909.

Seed collected in a wild state.

26068. APIUM GRAVEOLENS L.**Celery.**

From France. Presented by Mrs. E. M. Sheridan, 2300 G street NW., Washington, D. C., who procured the seed from Vilmorin-Andrieux & Co., Paris, France. Received October 5, 1909.

Improved Paris celeri-rave (Falaise). "The taste of this is similar to the meat of the large artichoke and only requires boiling and a dressing of drawn butter gravy after it is cut in slices or small chunks." (*Sheridan*.)

"Sow in February or March in a bed under glass; set out in well-manured ground at a distance of 30 to 40 centimeters (12 to 16 inches). Harvest in August and September.

"Plant in nursery beds in April or May; set out in May or June. Gather in October or November and keep during the winter.

"A variety obtained by Mr. Falaise and distinguished from the common celeri-rave by a much greater development of the root. Foliage tolerably high with slender petioles, dark green, strongly tinted with red; the leaves themselves are large, tolerably serrate, of a dark and shining green, especially on the upper part of the stalk. It is the race most liked by the Parisian market gardeners; it is an improvement on Large Smooth Paris celeri-rave, which it has replaced and which was itself a good selection from Common celeri-rave." (*Vilmorin-Andrieux & Co.*)

26069. ARALIA CORDATA Thunb.**Udo.**

From New York, N. Y. Purchased from J. M. Thorburn & Co. Received October 7, 1909.

Kan. See Bureau of Plant Industry Bulletin 42 for description; also S. P. I. No. 9166.

26070 to 26077. MEDICAGO spp.

From Chico, Cal. Grown at the Plant Introduction Garden by Mr. Roland McKee. Received September 22, 1909.

Seeds of the following; descriptive notes by Mr. McKee:

26070. *MEDICAGO HISPIDA CONFINIS* (Koch) Burnat.

"This is a selection from S. P. I. No. 16771 made at Chico, Cal., in 1906. It is a prickless form of bur clover and well adapted for pasturage, especially for sheep. It should be tested throughout the southern and southwestern United States. It has been grown for the increase of seed."

26070 to 26077—Continued.

Distribution.—The British Islands, France, Spain and Portugal, Italy, and the Balkan Peninsula.

26071. MEDICAGO HISPIDA NIGRA (L.) Burnat.

"Seed in the bur was received at the Plant Introduction Garden, Chico, Cal., in December, 1905, from the University of California. It perhaps will succeed wherever *M. hispida denticulata* or *M. arabica* does well. In California it is perhaps a little more aggressive than *M. hispida*. Of value for pasturage and soil improvement."

Distribution.—The European countries bordering on the Mediterranean Sea, including Spain, southern France, and Italy; also in the Balkan Peninsula, Asia Minor, Syria, Palestine, and northern Africa.

26072. MEDICAGO HISPIDA NIGRA (L.) Burnat.

Same as No. 26071.

26073. MEDICAGO HISPIDA Gaertn.

"Seed in the bur was received at the Plant Introduction Garden, Chico, Cal., in December, 1905, from the University of California. Of value for pasturage and soil improvement wherever common bur clover is adapted."

Distribution.—The Mediterranean region.

26074. MEDICAGO HISPIDA Gaertn.

Same as No. 26073.

26075. MEDICAGO HISPIDA TEREBELLUM (Willd.) Urban.

"Seed in the bur received at the Plant Introduction Garden, Chico, Cal., in December, 1905, from the University of California. This is practically a prickless form of bur clover and needs to be tested extensively in the West and South for pasturage and soil improvement."

Distribution.—The countries along the Mediterranean, from Spain to Palestine and Egypt.

26076. MEDICAGO MURICATA (L.) All.

"This is a selection made from seed which was received at the Plant Introduction Garden, Chico, Cal., in December, 1905, from the University of California. It is a form of bur clover having a large but very hard bur. Should be tested in sections adapted to bur clovers."

Distribution.—The province of Riviera, southern France, and in Dalmatia, Croatia, and Herzegovina, southern Austria.

26077. MEDICAGO SCUTELLATA (L.) Miller.

"Seed in the bur was received at the Plant Introduction Garden, Chico, Cal., in December, 1905, from the University of California. This is a form of bur clover having a very large papery pod, making it especially desirable for pasturage. It should be tested in particular in the warmer sections of the South."

Distribution.—The Mediterranean region.

26078. CAPRIOLA INCOMPLETA (Nees) Skeels.

Cynodon incompletus Nees, Linnæa 7: 301. 1832.

The genus *Capriola* was established by Adanson in 1763, while *Cynodon* was not published until 1805, forty-two years later. *Dactilon* was proposed for the same genus by Villars in 1787 and *Fibichia* by Koeler in 1802.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burtt Davy, government agrostologist and botanist, Transvaal Department of Agriculture. Received October 14, 1909.

"This is closely related to common Bermuda grass." (*C. V. Piper.*) (Roots.)

26078—Continued.

Distribution.—This species occurs in South Africa and was originally described from "Gaaup," in the district of Beaufort, Cape Colony. It has since been found in various localities from the vicinity of Lydenburg, Transvaal Colony, southward, and westward to the banks of Orange River in Little Namaqualand. In the central region of Cape Colony it is found at elevations of 3,000 feet.

26109. ZIZYPHUS SATIVA Gaertn.**Chinese date.**

From Chekiang Province, China. Presented by Mr. J. H. Judson, Hangchow, China. Received April 21, 1908. Numbered October 6, 1909.

"I can not say whether these plants are of a named variety or not. The Chinese have three kinds on the market, which they call red, black, and honey dates." (*Judson.*)

26110 and 26111.

From Beirut, Syria. Presented by Mr. A. E. Day, professor of natural science, The Syrian Protestant College. Received October 8, 1909.

Seeds of each of the following:

26110. CUCURBITA PEPO L.

"*Kusa.*" See No. 22810 for description.

26111. CUCUMIS SATIVUS L.**Cucumber.**

"We eat freely of this cucumber, and it is a common sight to see a Syrian child one or two years old chewing away at one; it does not seem to hurt them." (*Day.*)

26112. DIOSPYROS DISCOLOR Willd.**Mabola fruit.**

From Philippine Islands. Presented by Mr. William S. Lyon, Gardens of Nagtajan, Manila. Received October 11, 1909.

"A small tree, native of the Philippine Islands, introduced into India and cultivated in gardens, especially in Vizagapatam. The fruit is like a large quince and in some places is called mangosteen; its proper name should be the *Mabola* fruit. It is agreeable and has a pink-colored fleshy rind." (*Extract from Watt, Dictionary of Economic Products of India, vol. 3, p. 138.*)

See No. 19216 for previous introduction and description.

26115. MUCUNA GIGANTEA (Willd.) DC.

From Buntal, at the mouth of Sarawak River, Sarawak, Borneo. Presented by Mr. J. C. Moulton, curator, Sarawak museum. Received October 12, 1909.

Black. See No. 25514 for distribution.

26116. CRATAEGUS AZAROLUS L.

From Zichron-Jacob, near Haifa, Palestine. Presented by Miss Rifka Aaronsohn, through Mr. A. Aaronsohn. Received October 4, 1909.

"Arabian name za'arur. This species is very abundant throughout the Orient, where a great many varieties and forms of it are found. It grows wild on the slopes of dry, arid hills, preferably amongst calcareous rocks. It is a shrub with spiny branches from 1.5 to 4 or 5 meters in height, with a diameter of 10 to 30 centimeters. It is rather a slow grower.

"In the spring it bears dense corymbs of white flowers which are pleasantly fragrant. The size of the fruits varies in different varieties. Some have fruits as large

26116—Continued.

as 1 inch in diameter. The acid flesh has a delicate flavor, but there is not enough of it to give the fruits a commercial value. Fruits are occasionally found, however, that are practically without seeds and it might be possible to fix this character by selection. As it is the fruit is often sold in the oriental markets.

"I particularly recommend this *Crataegus* as a stock for pears. It is good for dry localities at any altitude. It is found as low as 200 meters below the level of the Mediterranean in the valley of the Jordan and as high as 1,800 meters above sea level in the desert near Petra. It ought, therefore, to thrive in southern California as well as on the plateaus of Colorado.

"My personal experience has shown that a top graft 6 inches or a foot above the ground is the best for this stock. It is best suited for the early varieties of pears.

"I recommend this as a stock, therefore, in high, arid situations where water is scarce or costly. It is an ideal stock for dwarf early pears. At Indio, Cal., for instance, it ought to yield prime fruit with very little irrigation.

"Palestine (where my father has had trees grafted in this way for 18 years) is not the only region in which *Crataegus azarolus* has been used as a stock for the pear. Mr. Dumont has used it for the same purpose near Tunis.

"I speak of pears because I have had personal experience with this fruit. But I can see no reason why it would not do as well as a stock for dwarf early apples." (*A. Aaronsohn.*)

Distribution.—A native of southern Europe, western Asia, and northern Africa, being found in Spain, Italy, Crete, Caucasia, Asia Minor, Syria, Palestine, Arabia; Persia, and Algeria.

26117. MEDICAGO SATIVA L.**Alfalfa.**

From Indian Head, Saskatchewan, Canada. Presented by Mr. Angus Mackay, superintendent, Dominion Experimental Farm for Saskatchewan, through Mr. Charles J. Brand. Received October 18, 1909.

Grimm.—"Grown at Indian Head from S. P. I. No. 12991; seeded in comparison with eight other strains in the spring of 1905. No. 12991 was produced in Minnesota in 1904 and was secured from Mr. A. B. Lyman, Excelsior, Minn. In the Indian Head experiments it has proven from the first (1905 to 1909) to be the best of the nine strains under test." (*Brand.*)

26118 and 26119.

From Wellington, New Zealand. Presented by Mr. T. W. Kirk, Biologist, Department of Agriculture. Received October 18, 1909.

Seeds of the following:

26118. MICROLAENA STIPOIDES (Labill.) R. Br. New Zealand rice-grass.

A native grass, much relished by all kinds of stock; the herbage is of a rich green color, and is produced in great abundance.

Distribution.—A native of New Zealand and Australia, where it is widely distributed and used for a lawn and pasture grass.

26119. DANTHONIA SEMIANNULARIS (Labill.) R. Br. Wallaby grass.

A grass which does well on any of the poorer classes of gumbo land, also on heavy clay soils. It stands drought with impunity, and throws up a good quantity of feed, which is eaten by all classes of stock.

See No. 21024 for previous introduction.

Distribution.—New Zealand, Tasmania, and the temperate parts of Australia.

26120 and 26121. FEIJOA SELLOWIANA Berg.

From Los Angeles, Cal. Presented by Mr. H. Hehre. Received October 11, 1909.

Seeds of the following:

26120. "These fruits were raised from a plant imported by me from Europe a number of years ago and which has been bearing regular crops for five or six years." (*Hehre.*)

26121. "These fruits are from a plant originated by me from seed imported from Europe; it has not been named. Ripens later than the preceding variety." (*Hehre.*)

"*Feijoa sellowiana* is worthy to be mentioned under promising new fruits and deserves the widest distribution. The plant stands more cold than the guava, is beautiful in bloom, and is evergreen. The fruit is green and when ripe has a tinge of yellow. As it blooms for a period of about two months, so does the fruit ripen successively for two months; therefore there are all sizes of fruit on the plant at the same time, which grow at the leaf axil on new wood." (*Hehre.*)

Distribution.—Found in the province of Rio Grande do Sul, in the southeastern part of Brazil, and in the vicinity of Montevideo, Uruguay; cultivated in southern Europe.

26122. SOLANUM sp.**Potato.**

From Castle Kennedy, Scotland. Presented by Rev. J. Aikman Paton, Souleseat. Received October 19, 1909.

"Tubers of *Solanum etuberosum* (so called; I think it is a wild hybrid of *S. tuberosum*, simply), which I used as the parent of my 'Immune' strain. A certain proportion of the 'selfed' seedlings of it and its hybrids are immune to *Phytophthora infestans* even here." (*Paton.*)

26123. CITRUS BERGAMIA Risso.**Bergamot orange.**

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received October 20, 1909.

Variety *mellarosa plena*. (Cuttings.)

26124. TRIFOLIUM SUBROTUNDUM Steud. & Hochst.

From 70 miles east of Lake Victoria Nyanza, British East Africa, at about 7,500 feet altitude. Presented by Mr. E. Blackburn, Salem, Ohio. Received October 19, 1909.

Distribution.—A native of Abyssinia, where it is cultivated as forage, under the name of Mayad; also native of Upper and Lower Guinea.

26125. MANGIFERA INDICA L.**Mango.**

From Port of Spain, Trinidad, B. W. I. Presented by Mr. F. Evans, Department of Agriculture. Received October 19, 1909.

Julie. "This plant is grafted upon the common mango, *Mangifera indica*." (*Evans.*) See No. 21515 for description.

26126 to 26129. SOLANUM spp.**Potato.**

From Bogota, Colombia. Presented by Mr. Eugene Betts, American vice and deputy consul-general. Received October 18, 1909.

Tubers of the following; quoted notes received with the shipment:

26126. "*Pápas Tocanas*. Produced on high, broken ground, mountain sides, high and very cold."

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26126 to 26129—Continued.

26127. "*Pápas Arrayanas, criallas coloradas.* Produced on the mountain tops and on high table lands."

26128. "*Pápas Paramunas.* Produced on the mountain slopes above the Savannah of Bogota."

26129. "*Pápas Amapalá.* Produced on the Savannah of Bogota."

26130. MEDICAGO SATIVA L.**Alfalfa.**

From Talas, Caesarea, Turkey. Presented by Dr. Wm. S. Dodd, through Mr. Charles J. Brand. Received October 19, 1909.

"In his letter transmitting this seed Doctor Dodd states: 'I am not sure whether the lucern for which you ask is the plant that we cultivate here for horse feed or not, but I send some of that. Yonja is the Turkish name.' Only a small package of this seed was received, and it should be reserved for experiments in the Southwest." (*Brand.*)

26132 and 26133.

From Mr. Frank N. Meyer, Agricultural Explorer. Received October 13, 1909.
Seeds of the following:

26132. PRUNUS sp.

From China. Obtained at the M. L. de Vilmorin Arboretum, Les Barres, Nogent sur Vernisson, France.

26133. PHOTINIA VILLOSA (Thunb.) DC.

From Western China. Obtained at the M. L. de Vilmorin Arboretum, Les Barres, Nogent sur Vernisson, France. "This plant has a rather dwarfy habit, is apparently evergreen in a climate not too cold, and may serve as a stock for loquats, besides being also ornamental. The plant will probably not be hardy in Washington, D. C." (*Meyer.*)

Distribution.—A native of the southeastern provinces of the Chinese Empire and of Formosa, and widely distributed in Japan.

26134. ALLIUM CEPA L.**Onion.**

From Denia, Spain. Procured from Señor Don Luis Tono, American consular agent, through Mr. Robert Frazer, jr., American consul, Valencia, Spain. Received October 20, 1909.

"Seed of the onion that is commercially grown on an extensive scale in Denia. These onions come upon the American market in a peculiar type of package and are the large yellow or straw-colored onions which are sold under the name of Spanish onions. The closest American representative of this type is the Prizetaker, which I understand is an American sport from this variety. It is probably the largest of the onions which are grown extensively for market, has the thinnest skin, is the mildest in flavor, and altogether is the best onion produced in the world. From imported seed we have succeeded in producing some very fine specimens in parts of Texas, and we hope that from this small beginning a very considerable industry will be built up. The probabilities are that we shall always need to import the seed direct from Spain in order to maintain the high quality in the American-grown product." (*L. C. Corbett.*)

26135. TRIFOLIUM SUAVEOLENS Willd. Shaftal, or schabdar.

From Tashkend, Turkestan. Purchased from Dr. Richard Schröder, director Chief Agricultural Experiment Station, at the suggestion of Prof. N. E. Hansen, Agricultural Experiment Station, Brookings, S. Dak. Received October 23, 1909.

26135—Continued.

The following notes were taken from a letter written by Doctor Schröder to Professor Hansen; clause in brackets is by Professor Hansen:

"In Persia the schabdar seed is usually sown in the fall, not too late. It endures the winter quite well. By sowing in the fall it develops in the spring so quickly that the first cutting is ready before the first cutting of alfalfa. According to information obtained in Persia the schabdar endures several years. This lot is of a new variety which endures from five to seven years. The fact that this plant is perennial comes in conflict with botanical statements [that it is an annual].

"In Persia the fresh shoots of the schabdar are also used for salad. The flowers are visited by bees."

26136. GOSSYPIUM BARBADENSE L.**Cotton.**

From Nyassaland Protectorate, British Central Africa. Presented by Mr. J. Stewart J. McCall, director of agriculture, Zomba. Received October 23, 1909.

"*Egyptian (Abbasi)*. Our Egyptian is not nearly so good as our Upland cotton (S. P. I. No. 25964)." (McCall.)

26137. FRAGARIA sp.**Strawberry.**

From Germany. Presented by Rev. J. M. W. Farnham, Chinese Tract Society, Shanghai, China. Received September 13, 1909

White fruited.

(Seed.)

26138 to 26140. RIBES hybrids.**Gooseberry.**

From Little Silver, N. J. Presented by Dr. W. Van Fleet. Received October 22, 1909.

Plants of the following; quoted notes by Doctor Van Fleet:

26138. RIBES MISSOURIENSE × RECLINATUM.

"Third generation. (*R. gracile* (*R. missouriense*) × *Red Warrington* × *Triumph* × *Keepsake*.) Six-year-old plant, very vigorous, 6 feet high, disease-resistant foliage, productive, berries dark reddish-purple when ripe, smooth, thin skinned, larger than Houghton, excellent quality, seeds small."

26139. RIBES CYNOSBATI × RECLINATUM.

"Second generation. (*R. cynosbati* × *Triumph* × *Whitesmith*.) Fair grower; rather spreading; good, disease-resistant foliage; berries large, dark red when ripe, few soft spines, very firm, agreeable flavor, small seeds; excellent for jelly."

26140. RIBES ROTUNDIFOLIUM × RECLINATUM.

"Third generation. (*R. rotundifolium* × *Houghton* × *Triumph* × *Keepsake*.) Healthy, upright grower; disease-resistant foliage; berries rather small, smooth, bright red when ripe, brisk, pleasant quality, exceedingly productive."

"These hybrids are final selections from hundreds of seedlings, representing 12 years of arduous work."

NOTE.—"Houghton is supposed to be *R. oxycanthoides* × *grossularia* (*reclinatum*)."

26141 and 26142.

From Pretoria, Transvaal, South Africa. Presented by Mr. F. T. Nicholson, secretary, Transvaal Agricultural Union. Received October 25, 1909.

26141. VICIA FABA L.**Horse bean.**

Light brown seeded.

(Seed.)

26142. GLADIOLUS sp.

(Bulbs.)

26143 and 26144.

From the Himalayas, India. Presented by J. Mollison, esq., Inspector-General of Agriculture in India. Received October 26, 1909.

Seeds of the following:

26143. *MALUS SYLVESTRIS* Mill.

Crab apple.

"*Pala (Palu)* is generally propagated by cuttings. When grown from seeds, the method of raising the plants is as follows: In the month of January, the plat to be sown is dug about one-half foot deep and is manured. Then the seeds are sown and germinate in the following summer.

"In January next (i. e., a year after), the plants are transplanted, where desired, in pits dug for that purpose. *Pala* is only grafted on seb (apple). It is also grafted with nashpati (pears), but the pears produced are sour." (*Mollison.*)

26144. *PRUNUS PADUS* L.

"*Jamu.* The process of cultivating jamu is the same as that of pala (S. P. I. No. 26143).

"This plant is grafted with aloocha (plum) (S. P. I. No. 26049) and yields aloocha fruit. If it is grafted on aloocha plant, jamu fruits will be produced." (*Mollison.*)

26145 and 26146. *ANDROPOGON SORGHUM* (L.) Brot.

Durra.

From Igatpuri, India. Presented by Mrs. Effie Pyle Fisher, through Miss Audrey Goss. Received August 31, 1909.

Seeds of the following; notes by Mr. Carleton R. Ball:

26145. "Apparently very similar to No. 9856, Dagdi durra, which we are selecting for grain production, and which now gives considerable promise of value for the Southwest."

26146. "A white durra with black hulls, probably a late sort."

26147. *CITRUS AURANTIUM SINENSIS* L.

Orange.

From Mount Gravatt, Brisbane, Australia. Presented by Mr. John Williams. Received October 28, 1909.

"*Usher's Favorite.* It ripens in October here, and is a splendid keeper; quality, flavor, and all things considered, I believe it to be really first class." (*Williams.*)
(Plants.)

26148 to 26155. *ANONA CHERIMOLA* Mill.

Cherimoyer.

From Santa Inez, Chile. Presented by Mr. Salvador Izquierdo. Received October 26, 1909.

"Nos. 26148, 26152, 26153, 26154, and 26155 are different cherimolas with very large fruits, of the form 'ananas.' No. 26149 is a very large cherimolia with smooth skin. Nos. 26150 and 26151 are large-fruited cherimolias, smooth skin, form 'concha.'" (*Izquierdo.*)
(Cuttings.)

26156 to 26160.

From Foochow, China. Presented by Mr. Samuel L. Gracey, American consul. Received October 25, 1909.

Seeds of the following:

26156 to 26158. *CITRULLUS VULGARIS* Schrad.

Watermelon.

26156. "White or Shanghai melon, very popular in this district." (*Gracey.*)

26156 to 26160—Continued.**26156 to 26158—Continued.****26157.** Yellow.**26158.** Red.**26159 and 26160.** GLYCINE HISPIDA (Moench) Maxim.**Soy bean.****26159.** Yellow seeded.**26160.** Green seeded.**26161. MEDICAGO SATIVA L.****Alfalfa.**

From different oases in the region of Ourlana and Tougourt, Algeria. Purchased from M. Colombo, père, Biskra, Algeria, at the request of Mr. Walter T. Swingle. Received October 29, 1909.

26162 to 26178.

Presented to Mr. P. J. Wester, Subtropical Garden, Miami, Fla., and turned over by him to this office for distribution, October, 1909.

Seeds (unless otherwise noted) were received of the following; notes by Mr. Wester:

26162 to 26174. Presented by Mr. J. M. Doctor, acting superintendent, Victoria Gardens, Bombay, India.

26162. ACACIA ARABICA (Lam.) Willd.

"The gum arabic. An evergreen shade tree with dense and spreading crown, attaining a height of 60 feet; valuable for its gum, bark, and timber; the pods are a favorite food for sheep and goats. The tree thrives on a great variety of soils and is resistant to droughts."

Distribution.—Widely distributed, being found in India, Ceylon, Egypt, Arabia, tropical Africa, and Natal.

26163. ACACIA sp.**26164.** BARRINGTONIA ASIATICA (L.) Kurz.

"An ornamental, lecythidaceous, evergreen shrub, attaining a height of 6 to 8 feet; cultivated as an ornamental on account of its shining foliage and large, handsome purple and white flowers produced on an erect thyrse."

Distribution.—Found along the shores of southern India, and of Australia, and on the islands between.

26165. BAUHINIA ACUMINATA L.

"A leguminous ornamental shrub, 6 to 8 feet tall, native of Malabar, bearing white flowers."

Distribution.—India, especially in the northwestern part, and extending to Ceylon, China, and the Malayan Islands.

26166. THESPESIA LAMPAS (Cav.) Dalz. and Gibs.

Distribution.—The tropical Himalayas of India, from Kumaon eastward, and in Bengal, Burma, and Ceylon; also found in Java and in eastern tropical Africa.

26167. BUTEA MONOSPERMA (Lam.) Taub.

"Leguminous, native of India. An ornamental shade tree with dense foliage, attaining a height of 40 to 50 feet. The flowers are very showy, crimson, 2 inches long."

Distribution.—Found throughout the plains of India, from the Himalayas to Ceylon and Burma.

26162 to 26178—Continued.**26162 to 26174—Continued.****26168. CASSIA AURICULATA L.**

"A shrub or small tree, native of India, the bark of which yields tannin. In young plants the bark has been found to contain 11.92 tannin and 22.35 extract; in old plants the corresponding figures are 20.12 and 29. In India the leaves are used as a substitute for tea and eaten as a vegetable in times of famine. This is also cultivated for its ornamental value. The yellow flowers appear in June and July."

Distribution.—Wild in the western and central part of India and in Ceylon; often cultivated in the Tropics.

26169. CASSIA GLAUCA Lam.

"A tall leguminous tree."

Distribution.—From the Himalayas, in India, through Ceylon and the Polynesian Islands to Australia.

26170. CASSIA GRANDIS L. f.

"A tree attaining a height of 45 to 55 feet furnishes a very handsome fine-grained wood. A dense shade tree, flowers very handsome, appearing in April."

Distribution.—The northern part of South America, from Panama, through Colombia and Guiana, to Brazil; also found in the West Indies.

26171. CAESALPINIA CORIARIA (Jacq.) Willd.

See Nos. 23335 and 25281 for previous introductions.

26172. PITHECOLOBIUM DULCE (Roxb.) Benth.

"A tree of very rapid growth, deserving wider distribution." See No. 23457 for description.

26173. FICUS BENGHALENSIS L.**Banyan tree.**

"In tropical India and Africa this tree attains a height of 70 to 100 feet. The aerial roots descending from the branches form accessory trunks, thus extending the growth of the tree from the main stem. The leaves are eaten by cattle. In India the fruits are eaten in time of famine. The wood, if carefully cut and seasoned, can be made into furniture and is sometimes employed in making boxes and door panels. The Hindoos regard the tree as sacred. The one tree in southern Florida that has come to my attention does so exceedingly well that the species deserves wider distribution."

Distribution.—Found wild in the lower Himalayan forests and on the Deccan hills; cultivated throughout India on the plains.

26174. FICUS CANNONII (Bull.) N. E. Brown.

"An ornamental-leaved greenhouse plant from the Society Islands. With the exception of the cultivated fig all species of *Ficus* introduced to southern Florida, as far as they have come to my attention, do so exceedingly well that I have thought it well worth while to introduce all species that are cultivated in other parts of the world in the hope of finding a suitable stock for the fig, which does not do well on its own roots here, largely on account of root-knot."

26175 to 26178. Presented by Mr. A. S. Archer, Antigua, British West Indies.

26175. THRYALIS GLAUCA (Cav.) Kuntz.

"An ornamental shrub bearing yellow flowers, Malpighiaceae."

26162 to 26178—Continued.**26175 to 26178—Continued.**

Distribution.—Mexico and Central America, from Sierra Madre and Zacatecas, south to Nicaragua.

26176. HAEMATOSYLUM CAMPECHIANUM L. Logwood.

“Leguminous. The tree furnishes the logwood of commerce and the wood may be utilized in turning. The honey produced from the flowers of this species is said to be the finest in the world. The tree attains a height of 30 to 45 feet.”

Distribution.—Central America, from Tehuantepec and Yucatan to Nicaragua and Colombia; also West Indies.

26177. BOUSSINGAULTIA BASELLOIDES H. B. K.

“A rapid-growing half-hardy ornamental climber. The flowers on opening are white and fragrant, turning black before withering. Easily propagated from tubers growing on the stem.”

Distribution.—Southern Mexico and South America, from Gonacatepec south to southern Brazil.

26178. CEDRELA ODORATA L.

“Indigenous to the West Indies; attains a height of 80 feet. The wood is light, of pleasant odor, and easily worked, preferentially chosen in its native country for cigar boxes and a variety of other articles; also furniture.”

26179 to 26182.

From Tripoli, in Barbary, North Africa. Presented by Mr. William Coffin, American consul. Received October 28 and November 1, 1909.

Seeds of the following; descriptive notes by Mr. Coffin:

26179. HORDEUM VULGARE L. Barley.

Dry land.

26180. PENNISETUM AMERICANUM (L.) Schum. Pearl millet.

“*Kassab*. The Arabs think very highly of this grain as a food and use the grass as fodder for their stock.”

26181. MEDICAGO SATIVA L. Alfalfa.

“*Safsafa* or *Susfa*. Sometimes they get eight crops of this in the eight months of the year it grows. I have seen at least five, and I think six, crops harvested from fields just back of my house. They irrigate about every four days.”

26182. CITRUS AURANTIUM SINENSIS L. Orange.

Blood flesh.

(Plants.)

26183. STIZOLOBIUM sp.

From Sibpur, near Calcutta, India. Presented by Maj. A. T. Gage, director, Royal Botanic Garden. Received November 2, 1909.

Black seeded.

26184. FUNTUMIA ELASTICA (Preuss) Stapf.

Presented by Mr. Gilbert Christy, F. L. S., care of Thomas Christy & Co., 4, 10, and 12 Old Swan lane, Upper Thames street, E. C., London, England. Received December 2, 1909.

“Seeds of a very large forest tree. I suggest that you have them planted in one of the Cuban stations. It would be necessary to shade the growing seedlings in the summer, otherwise they would be likely to dry off.” (*Christy*.)

26184—Continued.

Distribution.—Along the west coast of Africa from the Gold Coast in Ashanti through Lagos and lower Nigeria to the valley of Mungo River; usually in forests and along streams.

26185. STIZOLOBIUM sp.

From Tehwa, via Foochow, China. Presented by Miss Jessie A. Marriott.

Received December 3, 1909.

"This species has pods about intermediate in character between the Lyon bean, No. 19979, and the Yokohama, No. 25254. To judge from its behavior in the greenhouse, it is about intermediate in time of maturity between these two species. The flowers are white as in the Lyon bean; very similar to the Japanese variety." (C. V. Piper.)

26186 and 26187.

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received November 2, 1909.

26186. FURCRAEA BEDINGHOUSI K. Koch.

"This plant is said (like most *Furcraea*, I suppose) to produce good fibers. This species is hardier than any other *Furcraea* I cultivate or know, and has once resisted from 5 to 7 degrees below zero Centigrade, without suffering the least. A few seeds were also produced on the 6-meter-high flower stalk." (*Proschowsky*.)

Distribution.—On the slopes of Acusca Mountain, south of the city of Mexico, at an elevation of about 12,000 feet. (Bulbs.)

26187. MAYTENUS BOARIA Molina.

See No. 3394 for description.

Distribution.—Dry lowlands along the coast of Chili and southward into Patagonia. (Seeds.)

26188. KAEMPFERIA sp.

"Sherungulu."

From Transvaal, South Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria.

Received November 5, 1909.

"This plant grows in tropical and subtropical Transvaal and the tubers or rhizomes are dried and sent up from the Low Country, for sale to natives working on the Witwatersrand, by whom they are supposed to have medicinal or other virtues.

"It has been suggested that owing to the remarkable fragrance of the tubers, they might possibly be of use in the perfume trade for scenting tooth powders, soaps, etc.

"The flowers are distinctly ornamental." (*Davy*.) (Tubers.)

26189. CHRYSANTHEMUM HYBRIDUM Hort.

Shasta daisy.

From Rosedale, Santa Cruz, California. Presented by Mr. George J. Streator.

Received November 4, 1909.

"Streator's strain of the so-called Shasta daisy. Seed from the finest semidouble, quilled, fimbriated, or fringed forms." (*Streator*.)

26193 to 26195.

From Mexico. Procured by Dr. David Griffiths, Agriculturist, of this Department. Received November 5, 1909.

26193 to 26195—Continued.

Seeds of each of the following:

26193 and 26194. Cicer arietinum L.**Chick-pea.****26193.** Small seeded.**26194.** Large seeded.**26195. Physalis ixocarpa Brot.****Husk tomato.**

"This big blue husk tomato is often 4 centimeters in diameter, as found upon the markets of Oaxaca and Mexico City especially."

Distribution.—Found wild in California, Colorado, New Mexico, Texas, Mexico, and Cuba; cultivated, and often escaped, as far north as Massachusetts, Michigan, Dakota, Oregon, and Washington.

26196. Saccharum officinarum L.**Sugar cane.**

From Honolulu, Hawaii. Presented by Mr. Harold L. Lyon, Experiment Station of the Hawaiian Sugar Planters' Association. Received November 2, 1909.

Lahina. "This cane has proved itself to be the best money maker that Hawaii ever saw. Under irrigation it is a splendid cane if the conditions are suited. Unfortunately it is a cane that is very subject to disease. In those parts of Hawaii where it can still be used, namely, those parts where the sky is nearly cloudless the year around and the rainfall very slight, it still does better than any other cane. If any attempt to introduce this cane to other places from Hawaii is made, great care should be exercised to select cuttings free from disease." (*N. A. Cobb, letter of May 22, 1909.*) (Cuttings.)

26197 and 26198. Rubus spp.

From Enfield, England. Purchased from Messrs. Stuart Low & Co., Royal Nurseries, Bush Hill Park, at the request of Mr. Walter T. Swingle. Received November 4, 1909.

Plants of the following:

26197.

"*Lowberry.* This is said to be as large as the loganberry and to be as strong a grower, and to be 'altogether the most valuable novelty in the fruit way produced for some years.'" (*Swingle.*)

26198.

"*Low's Phenomenal.* A raspberry-loganberry hybrid, 'possessing all the flavor of the raspberry, and combining the free fruiting qualities of this now famous berry.'" (*Swingle.*)

26199. (Undetermined.)

From Standerton, Transvaal. Presented by Mr. O. W. Barrett, director of agriculture, Lourenço Marquez, Portuguese East Africa. Received November 8, 1909.

"Seeds of a striking asclepiad. This vine is probably native to the locality. Foliage not seen. Stems, thickish, green. Fruits (follicles) about 4 inches long, opening to about 3 inches wide. Ornamental and ought to make a good trellis or porch vine for the Southern States and California." (*Barrett.*)

26200. Lolium strictum Presl.

From Sfax, Tunis. Presented by Doctor Trabut, Algiers, Algeria. Received November 8, 1909.

"Seed of ray-grass, native name *maudjour*. Excellent forage; grows in arid regions; annual; interesting to cultivate in the steppes." (*Trabut.*)

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26200—Continued.

Distribution.—The countries bordering on the Mediterranean Sea and the Canary Islands.

26201 and 26202.

From 30 miles north of Hangchow, China. Presented by Rev. J. M. W. Farnham, Presbyterian Mission, Shanghai, China. Received November 2, 1909.

Seeds of the following:

26201. CUCUMIS MELO L.

Muskmelon.

Golden.

26202. SILENE sp.

Wild pink.

"Found on the mountain here." (*Farnham.*)

26203 to 26206.

Presented by Mr. H. F. Schultz, Ancon, Canal Zone, Panama. Received November 9, 1909.

26203. ANONA SQUAMOSA L.

From David, Chiriqui, Panama. "Seed from a tree bearing large and very superior fruits of fine flavor." (*Schultz.*)

26204. ARRACACIA sp.

"Aracache."

From Boquete, Chiriqui, Panama. "Tubers of a plant found growing in the neighborhood of Boquete in a cultivated and semicultivated state. The tubers grow to a size of 6 to 15 inches in length and about 6 to 8 inches in diameter, weighing from 2 to 10 pounds. The foliage resembles somewhat that of celery, and it grows to a height of about 10 to 18 inches above the ground. The taste of the root resembles a cross between a potato, celery, and asparagus, and it is eaten like potatoes, roasted, baked, or fried, as well as cut up in soups. I have found it growing at an altitude of 3,000 to 5,000 feet above sea level, and the inhabitants claim that it will not grow on the lower levels. I think, however, that it will do well in the Gulf States and that it will prove valuable, as I know that it is a well-flavored vegetable." (*Schultz.*)

See S. P. I. No. 3511 for previous introduction.

26205. BYRSONIMA COTINIFOLIA H. B. K.

From Chiriqui, Panama. "Seeds of a fruit called 'Nance' which is used by the inhabitants as the main ingredient for a cooling and very pleasing drink. This tree is found growing at all altitudes from sea level up to about 4,000 feet and above. I do not think that it is a very valuable tree. It may possibly succeed in southern California." (*Schultz.*)

Distribution.—Along the Pacific coast of Mexico, from the province of Tepic to Chiapas.

26206. PARMENTIERA CEREIFERA Seem.

From Bugaba, Panama. "Seed of an ornamental tree with peculiarly shaped candle-like fruits produced in great abundance on the second year's growth of the plant. The long, smooth, yellow fruits are 8 to 20 inches long and one-half to three-fourths of an inch in diameter, containing in the strong, fibrous, fleshy pulp numerous small flat seeds. The inside of the fruit has a strong musky fragrance, and the appearance of the bushy, spreading shrub, which grows to a height of about 12 to 15 feet, with its numerous candle-like fruits, is quite odd. The fruits were obtained on the ranch of Mr. Alexander Croetsch, of Bugaba, province of Chiriqui, and flowers were not in evidence." (*Schultz.*)

Distribution.—Confined to the valley of Chagres River, Republic of Panama.

26207. PROTEA MELLIFERA Thunb.

From Durban, Natal, South Africa. Presented by Prof. J. Medley Wood, director, Botanic Gardens. Received November 8, 1909.

A South African bush, useful both as an ornamental and as a bee plant.

26208. SOLANUM TUBEROSUM L.**Potato.**

From Solomon, Alaska. Presented by Mr. T. Brown. Received October 14, 1909.

"Tubers round to oblong, flattened; skin deep flesh color; eyes few and shallow." (W. V. Shear.)

26209 to 26223. CITRUS spp.

From Sawbridgeworth, Herts, England. Purchased from Thomas Rivers & Son, at the request of Mr. Walter T. Swingle. Received November 11, 1909.

Plants of the following:

26209 to 26219. CITRUS AURANTIUM SINENSIS L.**Orange.**

26209 to 26216. Subvarieties of the St. Michael's orange, which is said to be the ordinary orange of commerce, and although some of the strains have been tried in this country it was thought desirable to introduce the following:

26209. <i>Long.</i>	26213. <i>Dom Louise.</i>
26210. <i>Botelha.</i>	26214. <i>Egg.</i>
26211. <i>Bittencourt.</i>	26215. <i>Excelsior.</i>
26212. <i>Nonpareil.</i>	26216. <i>Dulcissima.</i>

26217. *White.* "Very distinct, with striped fruit and white pulp; flavor very good." (T. Rivers & Son.)

26218. *Embicus* (Navel).

"A singular variety, with a nipple-like excrescence at the apex; fruit large and good; pulp pale in color." (T. Rivers & Son.)

26219. *Silver* (Plata). "A delicious orange." (T. Rivers & Son.)

26220 and 26221. CITRUS LIMETTA Risso.**Lime.**

26220. *Common.* "An abundant bearer; fruit excellent for cooling drinks." (T. Rivers & Son.)

26221. *Bitter.* "Remarkable for the great fertility and dwarf habit of the tree; resembles the Bijou lemon so closely as to be distinguished with difficulty except by the color of its fruit." (T. Rivers & Son.) See No. 26222.

26222 and 26223. CITRUS LIMONUM Risso.**Lemon.**

26222. *Bijou.* "Pronounced to be a lime by some authorities. Fruit small, with a delicious aroma; growth of the tree very dwarf and fruitful; this is a remarkable sort." (T. Rivers & Son.) See No. 26221.

26223. *White.* "One of the largest and best." (T. Rivers & Son.)

26224. CARICA PAPAYA L.**Papaw.**

From Puerto Plata, Dominican Republic. Presented by Mr. A. W. Lithgow, American vice-consul. Received November 12, 1909.

"Native name 'lechosa,' the only class known here." (Lithgow.) (Seeds.)

26225 to 26227. CITRULLUS VULGARIS Schrad. Watermelon.

From Bucharest, Roumania. Presented by Mr. William G. Boxshall, vice consul-general, through Mr. Horace G. Knowles. Received November 13, 1909.

Seed of the following small melons:

26225. Red flesh.

26227. Red flesh.

26226. Yellow flesh.

26228 and 26229. AVENA SATIVA L. Oat.

From Feuchtwangen, Germany. Purchased from Mrs. Sophie Kreiselmeier. Received April 20, 1909. Numbered for convenience in recording distribution November 15, 1909, at which time definite information regarding this shipment was received.

Seed of the following:

26228. *Giant of Ligowa.*

26229. *Fichtelgebirge.*

26230 to 26235. CASTANEA hybrids.

From Little Silver, N. J. Presented by Dr. W. Van Fleet. Received October, 1909.

26230 and 26231. *CASTANEA PUMILA* × *CRENATA*.

"Mostly shrubby in habit; good growers; nuts twice as large as *C. pumila*, often three in a bur; productive, and bears at two to three years from seed. Supposed to be resistant to bark disease." (*Van Fleet.*)

26230. (Seeds.)

26231. (Plants.)

26232 and 26233. *CASTANEA PUMILA* × *SATIVA* (*Paragon* variety).

"Nuts four times as large as those of *C. pumila*, sometimes three in a bur; good growers; arborescent; productive and bears at six years from seed." (*Van Fleet.*)

26232. (Plants.)

26233. (Seeds.)

26234 and 26235. *CASTANEA PUMILA* × *CRENATA*.

"Second generation from self-pollinated seeds; vigorous; not fruited; supposed to be resistant to bark disease." (*Van Fleet.*)

26234. Arborescent plant. 26235. Shrubby plant.

26236 and 26237. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

From Cedara, Natal, South Africa. Presented by Mr. E. R. Sawyer, director, Division of Agriculture and Forestry. Received November 12, 1909.

Seeds of the following:

26236. "Mammoth yellow."

26237. "Chinese," yellow.

"This is our principal field crop in the Midlands." (*Sawyer.*)

26238 to 26240. RUBUS spp.

From Lowdham, Nottinghamshire, England. Purchased from Messrs. J. R. Pearson & Sons, at the request of Mr. Walter T. Swingle. Received November 16, 1909.

Plants of the following:

26238.

Blackberry.

Parsley leaved. "This is said to be of English origin, supposed to have originated at Handsworth, and is, in the opinion of Messrs. Pearson & Sons, 'far

26238 to 26240—Continued.**26238—Continued.**

better than any of the American kinds, and in addition to being a good cropper, it is very ornamental and may be used with good effect for covering wild rockery and rough banks.'” (*Swingle.*)

26239.**Raspberry.**

November Abundance. “This is said to produce ‘a good supply of fruit during September and onwards.’” (*Swingle.*)

26240.**Raspberry.**

Superlative. “Said to be a good dessert berry, of red color, large size, and of excellent flavor, readily picked on account of its long stalks.” (*Swingle.*)

26241. BRASSICA OLERACEA CAPITATA L.**Cabbage.**

From Dalny, Manchuria. Presented by Mr. A. A. Williamson, vice-consul in charge. Received November 15, 1909.

“The Manchurian cabbage is one of the chief articles of diet of the inhabitants of these regions. It is particularly tender, succulent, and well flavored. These are a few of the first seeds, which only ripen in the spring.” (*Williamson.*)

26242. QUERCUS AEGILOPS L.**Oak.**

From Patras, Greece. Presented by Hon. F. B. Wood, British consul. Received November 16, 1909.

Valonia. “The valonia oak derives its name from a Greek word signifying acorn. The valonia produces fully two or three times more than the ordinary oak. The term ‘valonia’ used commercially does not apply to the acorn but to the cup which contains it, which when ground is used for tanning purposes. The cup is a bright drab color, which it preserves as long as it is kept dry; any dampness injures it, as it then turns black and loses both its strength and value. The more substance or thickness there is in the husk or cup the better it is for commercial purposes.

“Valonia without the acorn (which is only of use for feeding swine, etc.) is worth about £8 to £10 per ton, but the finer quality sometimes fetches £2 or £3 more. In former years the article was worth double the above figures, but chemical and other substitutes used for tanning purposes have brought its value down to a point which scarcely covers the expense of picking and getting ready for shipment.

“The valonia oak flourishes almost exclusively in the Levant; Greece, several islands in the Aegean Sea, Crete, and Asia Minor are its favorite localities. There it thrives in great profusion and in every variety of soil and climate, being affected by neither severe heat nor great cold. In the plains of Elis in soft, heavy, rich soil the valonia displays all its beauties, and in perfect similarity to its congener growing on the barren and stony mountains of Acarnania and Laconia.

“The tree is very beautiful with its great outspreading branches and delicate foliage; it reaches in many instances a height of 60 feet and a girth of 15 feet 3 or 4 feet from the soil. In appearance it resembles the ordinary oak and has many of the latter's characteristics, forming occasionally great distorted boles. It produces the oak apple, and the mistletoe grows on it plentifully.

“The valonia tree can scarcely be called deciduous, for although the leaves attain a withered and brownish look in winter, only a certain proportion are cast before the fresh shoots appear in the early spring.

“The finest valonia forest I know of exists in the province of Achaia, between Patras and Pyrgos. In length it measures some 10 miles and in breadth about 4 or 5. The trees in most instances must be several centuries old.

“The manner of collecting valonia brings one back almost to patriarchal days. The Greek peasantry are for the most part and to a great extent nomadic. In the

26242—Continued.

summer and spring months they retire to their mountain villages, but in winter, driven down by the snows, they descend into the plains bordering the sea and live as squatters. Each family has acquired hereditary rights for years and years to occupy certain portions of the plains, paying a head tax for the cattle which accompany it and having a right to collect valonia in a certain area. The old patriarch of the family, with his wife, sons, daughters, and grandchildren may be seen collecting valonia, for which they pay a tax of 10 per cent in kind to the owner of the property.

"In 1899 the production of valonia in the different localities was as follows: 5,000 tons in Acarnania and Aetolia; 4,100 tons in Laconia and Arcadia; and 900 tons in Achaia. In 1908 the total product of Greece had diminished to 4,000 tons." (*Wood.*)

"Valonia consists of the acorn cups, the best of which contain about 40 per cent of tannin. It is especially serviceable in the production of heavy leathers. The tree has been grown in the vicinity of Paris, where it attained an age of 25 to 28 years before bearing fruit. In the collection of valonia the labor of children and young girls is said to be largely used, the pay of the most skillful amounting to about 30 cents per day." (*W. W. Stockberger.*)

Distribution.—Lower mountain slopes and valleys of Greece, and on the Cyclades. See No. 6833 for previous introduction.

26243. GARCINIA BRASILIENSIS Mart. (?)

From Lawang, Java. Presented by Mr. M. Buysman, Hortus Tenggerensis. Received November 19, 1909.

Distribution.—Found in the woods in the province of Para, in the northern part of Brazil. (Seed.)

26244 and 26245. POLAKOWSKIA TACACO Pittier.

From San José, Costa Rica. Presented by Mr. Ad. Tonduz, through Prof. H. Pittier. Received November 19, 1909.

26244. Small variety having fiber. **26245.** Large variety without fiber.

"A cucurbitaceous plant, the fruit of which is used as a green vegetable. It is a near relative to the chayote, but the fruit is smaller, fusiform, set with stiff spines at the base and of quite a distinct taste. It is one of the primitive foods of the native Indians of Costa Rica, where it grows wild in fresh, shady places of the temperate region, and its use as a vegetable has been readily adopted by the Spanish Costa Ricans. Nowadays the plant is at least semicultivated on the central plateau. To grow it, a whole mature fruit is set in a rich, loose leaf mold with the spiny end up and almost showing at the surface. The vines spread on the ground or on low bushes or supports. The fruits, which are about $2\frac{1}{2}$ inches long and $1\frac{1}{2}$ inches broad, hang from short peduncles and are picked when still green. After taking away the basal spines they are boiled in water, either whole or cut into small pieces, or pickled, or made into preserves. They are also a favorite addition to the native vegetable soups." (*H. Pittier.*)

26246 to 26252. PRUNUS spp.**Cherry.**

From western Hupeh, China. Purchased from Mr. C. S. Sargent, director of the Arnold Arboretum, Jamaica Plain, Mass. Received November 22, 1909.

Plants of the following; notes by Mr. E. H. Wilson:

26246. From Changyang Hsien. "(A. A. No. 3.) A very ornamental tree, attaining a height of 10 to 30 feet. Grows on mountains at an altitude of 2,500 to 3,500 feet. Flowers white."

26246 to 26252—Continued.

26247. From Changyang Hsien. "(A. A. No. 3a.) A very ornamental tree, attaining a height of 10 to 30 feet. Grows on mountains at an altitude of 2,500 to 3,500 feet. Flowers white."

26248. From north and south of Ichang. "(A. A. No. 3b.) A very ornamental tree, attaining a height of 10 to 30 feet. Grows on mountains at an altitude of 2,500 to 3,500 feet. Flowers white."

26249. "(A. A. No. 4.) No description.

26250. From Changyang Hsien. "(A. A. No. 5.) A rare and magnificent species, attaining a height of 35 feet. Grows in glades at an altitude of 3,500 feet. Fruit black."

26251. From Changyang Hsien. "(A. A. No. 7.) A very fine tree, rare, attaining a height of 25 to 35 feet. Grows in woods at an altitude of 3,000 to 3,500 feet. Flowers pink."

26252. From Changyang Hsien. "(A. A. No. 11.) A very common bush species, growing 10 feet high in mountains at an altitude of 2,500 to 3,500 feet. Flowers white and pink."

26253. VICIA FABA L.**Horse bean.**

From Kindred, N. Dak. Presented by Mr. A. P. Hertsgaard. Received November 22, 1909.

"Grown in North Dakota, summer of 1909. Seed originally from Holland. This is said to be called in Holland the pigeon pea." (*Hertsgaard.*)

26256 to 26259. EUCALYPTUS spp.

From Sydney, New South Wales, Australia. Procured from Mr. J. H. Maiden, director and government botanist, Botanic Gardens. Received November 25, 1909.

Seed of each of the following procured for planting on the experimental plantation to be established by the Forest Service, in cooperation with the Bureau of Plant Industry, at Brownsville, Tex.:

26256. EUCALYPTUS SIDEROXYLON A. Cunn.

Distribution.—Australia, in the provinces of New South Wales, Victoria, and South Australia.

26257. EUCALYPTUS GONIOCALYX F. Muell.

Distribution.—Southeastern Australia, from Twofold Bay in New South Wales, to the Buffalo Range in Victoria.

26258. EUCALYPTUS BOTRYOIDES Smith.

Distribution.—Eastern Australia, from Brisbane in Queensland, south through New South Wales, to Victoria.

26259. EUCALYPTUS PAUCIFLORA Sieber.

Distribution.—Common in Tasmania, and in South Australia, Victoria, and New South Wales.

26265. ROSA CANINA L.**Rose.**

From Mexico. Presented by Mr. Harvey C. Stiles, Mexico City, through Mr. P. J. Wester. Received November 26, 1909.

"Seeds of a wild rose, native of the cool, frostless Mexican highlands, but found only where there is constant moisture; it grows luxuriantly, often 12 to 20 feet high, and I have sometimes seen it in gardens, budded or grafted to other sorts of fine roses. It makes an ideal stock, not sprouting like *Manetti*, etc." (*Stiles.*)

26266 and 26267.

From Cape Town, South Africa. Presented by Mr. R. W. Thornton, government agriculturist, Department of Agriculture. Received November 23, 1909.

Seed of the following:

26266. *PENTZIA INCANA* (Thunb.) Kuntze.

“Karoo bush.”

Distribution.—Eastern South Africa, from Natal south to Uitenhage, Cape Colony.

26267. *PANICUM* sp.

“This is an indigenous grass which is considered to be one of the best grasses in the Orange River Colony, where in certain parts it is practically the only fodder which the stock have.” (*Thornton.*)

26268 and 26269. PASSIFLORA spp.

From Port of Spain, Trinidad. Presented by Dr. E. André. Received November 27, 1909.

Seeds of the following:

26268. *PASSIFLORA QUADRANGULARIS* L.

Granadilla.

“A plant of South American origin very closely allied to *Passiflora macrocarpa* and *P. alata*, now cultivated in many tropical countries. Its large, greenish-yellow fruit has a thick rind which is sometimes preserved, and the pulp surrounding its seeds, though sometimes insipid, is usually pleasant flavored and is made into cooling drinks and sherbets. The seeds are too large to be swallowed as in the case of the smaller fruited species. This plant is valuable for covering arbors and verandas. The leaves are large, membranaceous, and heart shaped; the large fragrant flowers have red petals alternating with the white sepals, while in the closely allied *P. macrocarpa* both the sepals and petals are purplish. Many species of *Passiflora* are incorrectly referred to this species.” (*W. E. Safford.*)

26269. *PASSIFLORA MALIFORMIS* L.

Sweet cup.

“This species is frequently cultivated in the West Indies, and on some of the islands it is found wild. The fruit is globose, or apple shaped, and much smaller than the Granadilla or Barbadiene (*S. P. I. No. 26268*). It has a thin shell-like envelope, not soft like that of the waterlemon (*P. laurifolia*) but varying in rigidity. In the specimens sent the shell, which is yellow and marked with numerous white dots, is easily indented, almost like that of *P. ligularis*, but in some varieties it is hard and rigid, even sufficiently so that snuffboxes can be made of it. The pulp is pleasant flavored and slightly acidulous, and the seeds are small enough to swallow. The leaves are simple, entire, and oval or ovate, with linear lanceolate stipules and petioles bearing two glands. The flowers are sweet scented and beautiful, variegated red and white, with blue coronal filaments.” (*W. E. Safford.*)

26270 to 26278. RUBUS spp.

From western Hupeh, China. Purchased from Prof. C. S. Sargent, director, Arnold Arboretum, Jamaica Plain, Mass. Received November 29, 1909.

Plants of the following; notes by Mr. E. H. Wilson:

26270. *RUBUS BAMBUSARUM* Focke.

From north and south of Ichang. “(A. A. No. 48.) A straggling plant; height 10 to 15 feet. Grows in thickets at an elevation of 3,000 to 5,000 feet. Flowers pink. A fine *Rubus*.”

26270 to 26278—Continued.

Distribution.—Bamboo forests on the mountain slopes, at an elevation of 4,000 to 6,000 feet, in the province of Hupeh, central China.

26271. RUBUS INNOMINATUS S. Moore.

From north and south of Ichang. "(A. A. No. 92.) A shrubby plant; height 3 to 5 feet. Grows in thickets at an elevation of 3,000 to 4,500 feet. Pinkish flowers. Fine, red paniculate fruits."

Distribution.—The valley of the Yangtze River at Kiukiang, in the province of Kiangsi, central China.

26272. RUBUS ICHANGENSIS Hemsl. and Kuntze.

From north and south of Ichang. "(A. A. No. 663.) A straggling plant. Grows in thickets at an elevation of 2,000 to 4,000 feet. Flowers white. A good thing."

Distribution.—The vicinity of Ichang, province of Hupeh, China.

26273. RUBUS PARKERI Hance.

From north and south of Ichang. "(A. A. No. 44a.) A straggling plant; height 6 to 15 feet. Grows in glens, etc., up to an elevation of 2,000 feet. Pink flowers, calyx red, very glandular."

Distribution.—The provinces of Hupeh and Szechwan, China.

26274. RUBUS LAMBERTIANUS Ser.

From north and south of Ichang. "(A. A. No. 482.) A spreading plant; height 6 to 10 feet. Grows in thickets at an elevation of 2,000 to 4,000 feet. Whitish flowers. Red fruits."

Distribution.—Kiukiang, in the province of Kiangsi, and along the valley of Lienchu River, in the vicinity of Saingu, province of Kwangtung, central China.

26275. RUBUS CHROOSEPALUS Focke.

From south of Ichang. "(A. A. No. 80.) A rambling plant; height 7 to 10 feet. Grows in thickets at an elevation of 3,000 to 4,000 feet. Leaves small, cordate, hairy below."

Distribution.—The vicinity of Patung, in the western part of Hupeh.

26276. RUBUS CONDUPLICATUS Duthie.

From north and south of Ichang. "(A. A. No. 97.) An erect plant; height 6 to 8 feet. Grows in thickets at an elevation of 3,000 to 5,000 feet. Flowers pink. Fruit red, growing in dense clusters."

26277. RUBUS COREANUS Miq.

From north and south of Ichang. "(A. A. No. 31.) An erect plant; height 6 to 8 feet. Grows on mountains, etc., up to an elevation of 4,000 feet. Flowers purple. Stems white. Ornamental."

Distribution.—The provinces of Kiangsi and Hupeh, in central China, and the islands of the Korean Archipelago.

26278. RUBUS HYPARGYRUS Edgew.

From Changlo Hsien. "(A. A. No. 152.) Grows on mountains at an elevation of 3,000 to 4,500 feet. Fruit dark red. Flowers paniculate. Leaves silvery below."

Distribution.—Himalaya Mountains of northeastern India and mountains of central China.

26279 to 26281.

From China. Presented by Rev. T. D. Holmes, Alfred, N. Y. Received November 24, 1909.

Seeds of the following:

26279. *ALEURITES FORDII* Hemsl.

China wood-oil tree.

Largest seeds of this variety yet received. See No. 25081 for description.

26280. *SAPINDUS MUKOROSI* Gaertn.

"The Chinese use this fruit, just as it is gathered, to wash with. My wife says these soap balls are superior to our soap for washing flannel fabric, in that they prevent shrinking." (*Holmes.*)

Distribution.—Southeastern China, in the provinces of Chekiang, Fukien, Hupeh, and Kwangtung. Also in India, and introduced into Japan.

26281. *GYMNOCLADUS CHINENSIS* Baill.

"The pods of this tree are used as a soap." (*Holmes.*)

Distribution.—The southeastern part of China, in the provinces of Hupeh, Chekiang, and Kiangsi.

26282. VICIA FABA L.

Horse bean.

From Cawnpore, United Provinces, India. Presented by Mr. H. M. Leake, economic botanist to government. Received November 29, 1909.

"Seed of the only form of *Vicia faba* grown here. It is a cold-weather crop, sown in October and ripening in March. The unripe pod is used as a vegetable and the ripe seed after soaking and boiling. The stalks are used as fodder for stock, chopped up and mixed with other fodder (e. g., sorghum).

"The plant is grown only for personal consumption. It has, therefore, no market value." (*Leake.*)

26283. PINUS PINCEANA Gordon.

From Mexico. Presented by Mr. Elswood Chaffey, Hacienda de Cedros, Mazapil, Zacatecas, Mexico. Received November 18, 1909.

"Seed from a pine which grows some 50 feet high and as much as 2 feet in diameter." (*Chaffey.*)

Distribution.—Along gulches on the slopes of the great table-land in northeastern Mexico, between 19° and 25° north latitude.

26284 to 26288.

From Tokyo, Japan. Presented by Mr. Albert J. Perkins, who procured them from The Tokyo Plant, Seed and Implement Co. Received November 29, 1909.

Seeds of the following:

26284 to 26287. *RAPHANUS SATIVUS* L.

Radish.

26284. *Sakurajima.* See No. 22399 for previous introduction.

26285. *Nerima.* See No. 22397 for previous introduction.

26286. *Takuwan.*

26287. *Miyashige.*

26288. *ARALIA CORDATA* Thunb.

Udo.

Kan. For description, see Bulletin 42, Bureau of Plant Industry, Department of Agriculture.

26289 to 26291.

From Kentung, Burma. Presented by Rev. R. Harper, M. D., American Baptist Shan Mission. Received November 29, 1909.

Seeds of the following; notes by Rev. R. Harper:

26289. *STIZOLOBIUM* sp.

"Collected by Captain McGregor. This is a sort of creeper, I believe, very thorny."

26290. *ANONA SQUAMOSA* L.

"*Mak au hsa*. This fruit is a favorite in Burma, and if it can be grown in the Southern States ought to command a large market."

26291. *CARICA PAPAYA* L.

Papaw.

Papaya, from which a digestive extract called papain is made.

26292 and 26293. STIZOLOBIUM spp.

From Dharapuram, India. Presented by Rev. George N. Thomssen, Baptla, South India, who procured them from Dr. C. A. Barber, government botanist, Agricultural College, Coimbatore, India. Received November 29, 1909.

Seeds of the following:

26292. "*Punarkkali*."

26293. (Native name not given.)

"These varieties grow wild in southern India." (*Barber*.)

26294 to 26296. VICIA FABA L.

Horse bean.

Presented by Mr. R. L. Sprague, American consul, Gibraltar, Spain. Received November 29, 1909.

Seeds of the following:

26294. From Mazagan, Morocco.

26295. From Spain.

26296. From Taragona, Spain.

26297. AMYGDALUS ANDERSONII (Gray) Greene.

Wild peach.

From Pyramid Lake, Nevada. Presented by Mr. Marsden Manson, San Francisco, Cal. Received December 1, 1909.

Mr. Manson recommends this wild peach as a stock and for hybridizing experiments. See No. 21657 for previous introduction.

Distribution.—California, from Sierra County southward to Inyo County, and in the western part of Nevada.

26298. ANONA LONGIFLORA S. Watson.

From Altadena, Cal. Presented by Dr. F. Franceschi, Santa Barbara, Cal. Received December 1, 1909.

"Fruit said to compare well in quality with the cherimoyer. The species is hardy and grows quite vigorously at Altadena, Cal. To judge from photographs of fruit, leaves, and seeds, it would seem to be a species intermediate between *Anona cherimola* and *Anona squamosa*, possibly a natural hybrid between these species." (*P. J. Wester*.)

Distribution.—In ravines on the slopes of the Cerro de San Estevan, in the vicinity of Rio Blanco, Mexico. (Seed.)

26299. (Undetermined.) (Scrophulariaceæ.)

From Yosemite Valley, Mariposa County, Cal. Presented by Mr. F. W. McCauley, through Col. G. B. Brackett, pomologist. Received December 1, 1909.

"Seed of a wild plant that grows in this section of the country and seems to be valuable for cattle to feed on. It is a large plant, attaining a height of 3 to 4 feet and growing in the shape of a small tree. It ripens in the latter part of October, coming up the following season from seed. It is at its best for cattle in August, when it is still tender. When driven cattle throng the woods at this season of the year they will go out of their way to munch on this plant; later in the season it becomes hard and woody, and then cattle will only eat the more tender branches of it. This plant grows in light, sandy soil of granitic origin and apparently without moisture; it thrives on steep south hillsides among brush and rocks, also on the mountain top in the pine forests 4,000 feet above sea level. A peculiarity of the plant is that it grows in little patches—here half a dozen plants, and there possibly 50 together; I believe the seed does not spread readily. If this plant could be cultivated with success I believe it would be valuable as a forage plant to be grown without irrigation. It grows well at altitudes as low as 2,000 feet above sea level, where the thermometer stands at 100° and marks as high as 110°." (McCauley.)

26300. ROYSTONEA REGIA (H. B. K.) O. F. Cook.

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received November 27, 1909.

"A variety from Mexico." (Proschowsky.)

Distribution.—Common about Cruces, Gorgona, and San Juan, in Panama, and in Cuba, Antigua, and other West Indian islands.

26301. ANDROPOGON HALEPENSIS VIRGATUS Hackel.

From Algiers, Algeria. Presented by Doctor Trabut. Received December 2, 1909.

"This grass is vigorous, but not stoloniferous, and would be interesting for hybridizing with *Sorghum vulgare* [*Andropogon sorghum*]. It is a moderately good forage like Johnson grass, but has the advantage of not stooling. This variety is perennial here and produces many seeds." (Trabut.)

Distribution.—Egypt, extending from Alexandria, through Nubia, to the valley of the White Nile, in the Province of Kordofan.

26302 and 26303. VIGNA UNGUICULATA (L.) Walp. Cowpea.

From Entebbe, Uganda. Presented by Mr. R. Fyffe, Botanical and Forestry Department. Received December 3, 1909.

Seeds of the following; native names as given by Mr. Fyffe:

26302. Buff seeded. (This number was assigned to three packages of seed which had been mixed in transit. The native names are as follows: "Mpendi Kiriya Mugombere," "Mpendi Kantinti," "Mpendi Bimogoti.")

26303. Black seeded. "Mpendi Luzzige."

26304 to 26329.

From Chile. Received through Mr. José D. Husbands, Limavida (via Molina), Chile, November 9, 1909.

Seeds of the following; notes by Mr. Husbands:

26304 to 26329—Continued.**26304. ACACIA LONGIFOLIA (Andr.) Willd.**

"*Aromo.* A grand, yellow-flowered tree, grown in Chile from the time of the Spanish, for ornamental purposes."

Distribution.—A shrub or small tree found throughout Australia and in Tasmania. Used as a street tree in California.

26305. AEXTOXICON PUNCTATUM R. and P.

"In Valdivia and Chiloe this plant is called 'tique' or 'palo muerto;' in the north it is called 'acietunillo' or 'olivillo.' It grows along the coast of Chile from Valparaiso to the island of Chiloe."

26306. ARISTOTELIA MACQUI L'Herit.

"*El Maqui.* This is a valuable wild fruit tree and I believe is capable of improvement. The fruit is abundant, astringent, sweet, and refreshing. In time of fruitage 'chicha de maqui' is highly esteemed as a healthful beverage. It is nonfermented; the fruit is simply mashed and mixed with water and the liquid drawn off and drunk. The fruit juice is similar in color to blackberry juice; it stains whatever it comes in contact with, but it is not indelible. The fruit is gathered in immense quantities and dried for export and domestic uses, especially for coloring wines or imitating them. These seeds are from near Puerto Montt, which is the extreme southern limit of the territory allotted to their growth; they are as good as 'el maqui' of central Chile. The color of the fruit is generally a reddish black; brown, white, and pink fruits are sparsely found in a few localities, but these are different varieties. This tree sometimes attains a height of 30 to 35 feet. Usually it is not more than 12 to 15 feet high and 4 inches in diameter, but I have seen trees 16 inches in diameter. They thrive in dry central Chile, but seek the moisture of the ravines. The tree reminds one of a cherry tree. The wood is not considered. The bark of the new wood is very flexible and is used for making lassos and ropes for use about the farm; also for tying in the vineyards. The ties are strong and last a long time if dampened before using. Birds and foxes are very fond of the fruit and scatter the seeds in a fit state to germinate.

"The juice of the leaves is a splendid remedy for throat diseases and ulcers and has a fame for healing wounds. An infusion of the leaves is employed as a gargle. Reduced to a powder, they serve effectively as a healing ointment. They are also good made into a poultice, especially when placed over the kidneys to calm fevers. The fruit, being a quick, mild acid, and astringent, is often used as a refreshing drink in the sick room and is especially efficacious in fevers; toasted and ground or broken and put into hot water it is a sure remedy against the worst cases of diarrhea, dysentery, and cholera; being perfectly harmless the fruit or decoctions may be eaten or drunk in any quantity. The plant is widely distributed, from always dry, rainless Coquimbo to Chiloe's perpetual moisture."

Distribution.—Along ravines from central Chile to Puerto Veras.

26307 and 26308. AVENA SATIVA L.**Oat.****26309. BOQUILA TRIFOLIATA (DC.) Decaisne.**

"'Voquil blanco,' 'boquila,' and 'pilpil blanco' are the Indian names. It grows along the edges of the woods from the thirty-fifth degree of latitude south to and including the island of Chiloe; it avoids altitudes and seeks the moist lowlands. The fruit is without importance."

26310 and 26311. CHUSQUEA QUILA (Poir.) Kunth.**Bamboo.**

"This seed is from the provinces of Cautin and Malleco, in the vicinities of the volcanos Lonquimai, Llaima, and Villa Rica. Several small lots from

26304 to 26329—Continued.

26310 and 26311—Continued.

different places are contained in this shipment and may or may not be all of the same variety. They are not of the Valdivia class."

Distribution.—The Chilean coast from Valparaiso to Chiloe.

26312. CITRULLUS VULGARIS Schrad.

Watermelon.

"A watermelon that was harvested in February and eaten in July."

26313. CUCUMIS melo L.

Muskmelon.

"A melon that grew without water in the poorest arid soil."

26314 and 26315. EMBOTHRUM COCCINEUM Forst.

26314. "'Notru,' 'el ciruelillo.' A beautiful, flowering ornamental tree fit for any place. Has bunches of bright crimson flowers in early October and dark-green leaves, which are pale green beneath. It grows in the south up to 22 feet and 12 to 16 inches in diameter. A decoction of the bark or leaves is used to cure glandular affections; infusion or smoke cures dental neuralgia, and is also used to cicatrize wounds."

26315. "'Lirhuerillo.' From the Province of Llanquihue. Useful as a timber tree."

Distribution.—The southern part of Chile.

See Nos. 25491 and 25492 for previous introductions.

26316. EUCRYPHIA CORDIFOLIA Cav.

"North of Valdivia this is called 'Ulmo;' at the south 'Muermo.' An evergreen tree with dense foliage, very beautiful on account of its abundant bunches of beautiful, white, fragrant flowers; it grows 50 feet high and 2 feet in diameter. Its hard wood is tan colored, of good quality for charcoal and bright blazing fuel, extra-durable railroad ties, heavy timbers, planks or boards, casks and vats, furniture, or any inside work; it becomes a darker red from exposure and age. Its wood and bark are highly impregnated with tannic acid. The bark contains about 35 per cent of tannin of great excellence, which quickly tans leather of superior quality and of much flexibility. The tanned product has a clean, light-buff color and an increased weight over the crude skins. The tannin of the wood serves for tanning, but is not used on account of its giving leather a blue cast. Ulmo bark is better than lingue and has been successfully applied in the form of concentrated extracts; its superiority as a tanning compound is of recent knowledge. It flowers in November and December and seeds in March and April."

Distribution.—The region around San Carlos, Chile, and extending south to the island of Chiloe.

See No. 25490 for previous introduction.

26317 and 26318. GEVUINA AVELLANA Molina.

26317. "'Avellana.' One of the handsomest trees in the world; its glossy, evergreen leaves, bunches of white, fragrant flowers and crimson nuts all at the same time, and its general symmetrical grace and beauty, make a very impressive sight. It grows in the Cordilleras of south and central Chile to the thirty-fourth degree of latitude and not beyond; is also found in the low coast range of the Cordillera Maritima. These seeds were found growing in latitude 44°; they need to be soaked in water a long time to germinate; they thrive in any soil, dry or wet, high or low lands here, but moist land is best for them. The wood of this tree is tough and elastic, takes a high polish, and is good for furniture."

26304 to 26329—Continued.**26317 and 26318—Continued.**

26318. “*Avellana.*” From the Cordillera of central Chile. Soak the seeds well.”

See No. 25611 for previous introduction and distribution.

26319. GREIGIA SPHACELATA (R. and P.) Regel.

“*Chupones.*” From the mainland in the Province of Llanquihue.”

Distribution.—In humid situations about Concepcion, Chile, and south to the province of Llanquihue.

See No. 25476 for previous introduction.

26320. GUNNERA CHILENSIS Lam.

“*Nalca.*” This grows only in wet places, banks of streams, ravines, etc. It is like a giant pieplant or rhubarb and is very ornamental; it is somewhat different from ‘Pangue’ (S. P. I. No. 25477); the former is eaten raw after the bark or skin is removed and has an agreeable sweet-acid taste; its juice made into ices is eaten with gusto. A decoction for diarrhea, etc., is made from the roots, which are hard and very astringent; the small quantity of juice which they contain is a valuable, permanent black dye for cloths and is estimable for tanning skins. The new sprouts are much esteemed by the Indians; they call them ‘pampancallhue.’ Oxen eat the leaves with relish when accustomed to them.”

See No. 25477 for previous introduction and distribution.

26321. LAURELIA SEMPERVIRENS (R. & P.) Tul.

“Indian name ‘el huahuan.’ The evergreen laurel is too well known to need description. The industrial applications, large dimensions and merits of its timber, durability when not exposed to the elements, facility to work, ability to permanently receive any stain, etc., require no comment. It is necessary to cut the tree for lumber when the sap is down. It grows to immense size in the Cordilleran foothills of the south and gradually diminishes in size as it is found north of the river Bio Bio. It has nearly all the medicinal properties of *Laurelia aromatica*, among which are the following: An infusion of the scraped or pounded wood, the leaves or flowers is used to cure pains in the head which are the results of colds; the same and especially an infusion of the leaves is used for affections of the digestive tubes, urinary organs, to combat bronchitis and as baths or lotions to strengthen the nervous system, to alleviate or moderate paralysis, to fumigate the body against spasmodic convulsions; a pomade made of the powdered leaves cures skin diseases. The ground bark being placed in the cavity of a tooth stops the pain; an infusion of the bark is used as a remedy for lockjaw, etc.”

Distribution.—Frequent in the woods in the vicinity of Valparaiso, Chile, and south to the island of Chiloe, rising to an elevation of 8,000 feet on the mountain slopes.

26322 and 26323. MAYTENUS BOARIA Molina.

26322. “Large-leaved variety.” **26323.** “Small-leaved variety.”

“An evergreen forest tree, native name ‘el maiten.’ A beautiful, fine-leaved, dense, semidrooping, small-limbed, shade tree of rare excellence, growing naturally in a round form up to a height of 12 meters and about 12 inches thick. It naturally seeks the driest, poorest, arid lowland soils. It has great value as forage for horses and cattle; in times of drought or grass failure, hungry animals are kept alive by breaking a few branches daily and feeding the leaves. The wood is fine grained, hard, elastic, and mostly plain white and pale yellow, some-

26304 to 26329—Continued.**26322 and 26323—Continued.**

times with a light pinkish-red cast; some varieties are beautifully veined with red and olive colors. The Araucana Indians use the wood to make their bows."

Distribution.—Dry lowlands along the Chilean coast and south to Patagonia.

See No. 23272 for previous introduction.

26324. NOTHOFAGUS sp.

"*Rauli.*" A giant forest tree of the greatest industrial value; it may be favorably compared with the American black walnut in respect to its uses and commercial importance. Like the finest pines it is used to make all kinds of sash, doors, blinds, and for every class of furniture, and inside and outside construction; it is durable, easy to work, receives and long retains any paint or stain, admits of the highest class of polish, is tasteless, and is largely used for wine casks, tubs, vats, store fixtures, etc. The wood does not warp, split, fade, or rot. The trunks are long and extra thick, requiring the full capacity of both the upper and lower saws of the mills to cut them through. In my opinion '*rauli*' is the most valuable wood in Chile for general uses. Grows only in the provinces of Nuble, Concepcion, Malleco, and Cautin."

26325. QUILLAJA SAPONARIA Molina.

"*Quillai.*" It will certainly pay to plant plantations of this valuable tree. The natural source of supply is exhausted. They seek the dry hillsides and foothills, where they thrive in the driest and worst kinds of arid soils."

Distribution.—In the valleys and on the plains at the base of the mountains from Illapel, south to the valleys of the Angol and Levu rivers, Chile.

26326. RHAPHITHAMNUS PARVIFOLIUS Miers.

"In the province of Valdivia this is called '*espino blanco*;' further south the Indians call it '*arrayan macho*,' '*arrayan de espino*,' '*guayun*,' and '*repu*.' It is an evergreen bush or treelet about 20 feet high, good for live fences and ornament."

Distribution.—The southern part of Chile and the adjacent islands.

26327. SOLANUM sp.**Potato.****26328. SOPHORA TETRAPTERA J. Mill.**

"*Pelu.*" This treelet of 12 to 15 feet is beautifully ornamental, having abundant bunches of fragrant, yellow flowers, which come in August and September before the leaves appear. The wood is not very thick, but is extra valuable on account of its extreme hardness; it is used for hubs, spokes, plow points, pulleys, cogwheel teeth, pins for sailing boats, ships, etc. It grows between Concepcion on the north and Puerto Montt south, also upon the island of Juan Fernandez, where it is called '*Guayacan*.' The scraped wood serves as a stimulant and cathartic. It is also used for chronic rheumatism, gout, syphilis, and cutaneous diseases. Lasts forever in water."

See No. 25479 for previous introduction.

26329. TEPUALIA STIPULARIS Griseb.

"*Tepu.*" This is a small, beautiful tree, which grows along the coast of Chile from Valdivia to the island of Chiloe, where it forms dense impassable forests; the Indians call these woods '*Tepuales*.'

26330 to 26343. THEA SINENSIS L.**Tea.**

From China. Procured by Vice-Consul Nightingale under directions from Mr. S. L. Gracey, American consul at Foochow, at the suggestion of Ambassador

26330 to 26343—Continued.

Rockhill before he left Pekin for St. Petersburg, Russia. Plants received at the Plant Introduction Garden, Chico, Cal., December 1, 1909; seeds received at Washington, D. C., December 6, 1909.

Plants of the following:

26330 to 26332. From the Kienning district.

26330. *Lotus Heart.*

26332. *Dragon Pool.*

26331. *Water Fairy.*

26333 to 26336. From Wuishan district, the cliff-grown teas from River of the Nine Windings.

26333. *White Cock Comb.*

26335. *Superior.*

26334. *Great Red Robe.*

26336. *Dragon Pool.*

Seeds of the following:

26337. *Water Fairy* (parent plant).

26338. *Dragon Pool* (parent plant).

26339. *Dragon Pool.* From Heaven Sauntering Place.

26340. *White Cock Comb* (parent plant).

26341. *Red Robe* (parent plant).

26342. *Red Robe.* From Heaven Heart Temple.

26343. *White Peony* (parent plant).

"The cliff-grown teas are extremely rare and valuable, and I do not believe can be obtained again, as the Chinese are not at all anxious to have the tea of this district become general. The department having for some years past written for seed of the 'Dragon Pool teas,' which I was unable to obtain otherwise, though repeated requests have been made, I sent my vice-consul, Mr. Nightingale, and through the extreme courtesy of the viceroy of Fukien, the magistrate of Chungan, and two mandarin friends, he was allowed to gather seeds and select the plants I send. There is 200 miles of foot journey besides considerable boat trip from Foochow to this district, which involves some expense. The peculiar flavor of these cliff-grown teas is said to come from the soil, and other soil may impart an entirely different flavor to the same plant. The earth about the cliff teas is very sandy and not at all rich. A rich soil they claim is not good for tea, as the plant will grow too high and not remain stunted, as is considered desirable. In this district frost occurs often, and now and then there is light fall of snow, which lasts but a short time. The entire district of the River of the Nine Windings is composed of huge red sandstone cliffs and boulders, and in the shadow and clefts of these, wherever a little of the sandy soil is found, the tea grows. Other than a little digging about the roots at this season of the year (October), no attention is necessary.

"Some fertilize the plants once or twice a year with night soil; the fertilization is not considered necessary.

"Some plants produce as many as four kinds of tea, according to the size of the leaf and the time of gathering. The teas of this district in order of superiority are 'White Cock Comb,' 'Great Red Robe,' 'Superior,' 'Lotus Heart,' 'Water Fairy,' and 'Dragon Pool.' The White Cock Comb and the Red Robe plants were those growing closest to the original plant. The White Cock Comb is said to be 'the original tea plant and to have fallen from heaven;' twice a year the Chungan magistrate comes to see that it is all right and worship at a neighboring temple. The Dragon Pool tea plants are from a little inclosure back of this temple, where a brother of an emperor in the Sung dynasty retired at one time to raise tea, and which I believe has given rise to the story of the

26330 to 26343—Continued.

'Royal Inclosures.' The 'Special Tea' comes from the Chungan magistrate's private stock. The Kienningfu plants produce an inferior quality of tea from that of the cliff district. These plants may be raised from cuttings in the spring; those of the cliff district by seed only.

"The seeds should be soaked in water twenty-four hours before planting, and then planted in the open to a depth of 5 inches in low mounds 3 feet apart; ridges should be made so the rain runs freely from the mounds. Considerable moisture after planting is not desirable.

"The Dragon Pool seed sent is from the Wuishan district. All the seeds are authentic, as Mr. Nightingale gathered them personally." (*Extract from letter dated October 25, 1909, written by Consul Gracey to Mr. George S. Baker, United States dispatch agent, San Francisco, Cal.*)

26344 to 26352. Rosa spp.**Rose.**

From Woods Hole, Mass. Presented by Mr. M. H. Walsh. Received December 2, 1909.

Plants of the following Rambler roses; descriptive notes by Mr. Walsh:

26344. "*Kalmia* is a beautiful light *Kalmia* formed and colored flower, single."

26345. "*Bonnie Belle* is carmine and pink, single."

26346. "*Delight*, bright red."

26347. "*La Fiamma*, single; intense crimson, with white center."

26348. "*Coquina*, as its name denotes, is shell color."

26349. "*Milky Way*, single, white, large flower; an improved wichuriana."

26350. "*Lady Blanche*, double white wichuriana hybrid; very dark, glossy foliage; flowers borne in clusters similar to Lady Gay. This variety is deliciously fragrant."

26351. "*Excelsa* is double, crimson maroon, with tips of petals fiery scarlet; this will rank as one of the best."

26352. "*Jessica*, a climbing variety, large glossy foliage; large, double flower, cotton white, fragrant; a valuable acquisition."

26353. METTERNICHIA WERCKLEI K. Schum.

From San Jose, Costa Rica. Presented by Mr. Ad. Tonduz. Received December 4, 1909.

"Fleshy roots of what Mr. Carlos Wercklé calls the 'edible tuber' of *Metternichia wercklei* K. Schum. (Solanaceæ); he experimented with eating these pseudotubercles and found them agreeable and without any poisonous principle. *Metternichia wercklei* grows in the high plateaus of La Palma, near San Jose, at 5,000 feet altitude. It is sometimes a branching bush, 7 to 10 feet high, which grows in the ground, and sometimes a semiepiphyte which grows in rotted trunks of trees or in a hollow of some large tree. Mr. Wercklé says that this bush can be propagated very easily by means of pieces of roots." (*Tonduz.*)

26354. CRATAEGUS AZAROLUS L.

From Acre, Palestine. Presented by Miss Rifka Aaronsohn, Zichron-Jacob, near Haifa, Palestine. Received October 19, 1909.

"Seed of the large, red-fruited variety." (*Aaronsohn.*)

See No. 26116 for description.

26355. POPULUS LASIOCARPA Oliver.

From Chelsea, London, England. Purchased from Messrs. James Veitch & Sons.
Received December 8, 1909.

"The ovate cordate leaves of this new poplar are extremely large and attractive, measuring 10 to 12 inches in width. They are bright green in color, whilst the petiole, midrib, and principal veins are of a rich red hue. The tree in central China attains a height of 15 to 40 feet and should prove a valuable addition to our ornamental deciduous trees." (*Veitch & Sons.*)

Distribution.—Central China, in the provinces of Hupeh and Szechwan.

26356 to 26362.

From Malkapur, Berar, India. Presented by Mr. A. S. Dhavale. Received November 29, 1909.

Seeds of the following; quoted native names as given by Mr. Dhavale:

26356. CROTALARIA JUNCEA L.

"*Boru.*"

Distribution.—Plains of India from the Himalayas to Ceylon, the Malayan Islands, and Australia. Cultivated for fiber.

26357. DOLICHOS BIFLORUS L.

"*Kulitha.*"

26358. DOLICHOS LABLAB L.

Bonavist bean.

"*Val.*"

26359. GUIZOTIA ABYSSINICA (L.) H. Cass.

"*Karala.*"

26360. PHASEOLUS MAX L.

"*Urid.*"

26361. PHASEOLUS RADIATUS L.

"*Mug.*"

26362. VIGNA CATJANG (Burm.) Walp.

"*Chavali.*" Brown eye, small.

26363 to 26385. GARCINIA MANGOSTANA L. Mangosteen.

Grown at the United States Department of Agriculture greenhouse, Washington, D. C., numbered December 17, 1909.

"These seedlings were raised from S. P. I. No. 21276, received through Mr. H. F. Macmillan, Royal Botanic Gardens, Peradeniya, Ceylon, August 22, 1907. The seedlings were inarched to 4-year-old plants of *Garcinia tinctoria* (DC.) W. F. Wight (*G. xanthochymus*), S. P. I. No. 11788, raised from seeds obtained from Dr. John C. Willis, director of the Royal Botanic Gardens, Peradeniya, Ceylon, October 31, 1904. *G. tinctoria* was used as a nurse plant to which the seedlings of the mangosteen were inarched. Since the unions were effected the mangosteens have made splendid growth and this method promises to be the best one so far as my experimental work in the propagation of the mangosteen has gone. It has been deemed best to give each of these inarched plants a separate S. P. I. number, so that they will not be confused with other mangosteens worked by different methods." (*G. W. Oliver.*)

26386. PUNICA GRANATUM L. Pomegranate.

From Tripoli, in Barbary, North Africa. Forwarded by the American vice-consul, at the request of Mr. William Coffin, American consul, who presented them to the Department. Received December 10, 1909.

26387 and 26388.

From Georgetown, Demarara, British Guiana. Presented by Mr. F. A. Stockdale, assistant director and government botanist, Science and Agriculture Department, Botanic Gardens. Received December 10 and 11, 1909.

Seeds of the following palms:

26387. *ATTALEA COHUNE* Mart.

See No. 1970 for description.

Distribution.—Honduras, and the northeastern part of South America.

26388. *COPERNICIA TECTORUM* (H. B. K.) Mart. (?)

Distribution.—The valley of the Orinoco River, in South America.

26389 to 26397. ZEA MAYS L.**Corn.**

From Hamburg, Germany. Purchased from Mr. Albert Schenkel, 47 Rosenstrasse. Received December 10, 1909.

Seeds of each of the following; names of varieties as catalogued:

26389. *ZEA ATROPURPUREA*.

26390. *ZEA CARAGUA*.

26391. *ZEA GRACILLIMA VARIEGATA*.

26392. *ZEA GRACILLIMA VARIEGATA gigantea*.

26393. *ZEA GRACILLIMA ZEBRINA AUREA*.

26394. *ZEA JAPONICA*, foliage variegated.

26395. *ZEA JAPONICA GIGANTEA QUADRICOLOR*.

26396. *ZEA* sp. Rissen mais von Peru.

26397. *ZEA TUNICATA*, foliage variegated.

The above were purchased for the experiments of Mr. G. N. Collins, assistant botanist, Bionomic Investigations, this Department.

26398. CITRUS AURANTIUM SINENSIS L.**Orange.**

From Toliman Barranca, Hidalgo, Mexico. Presented by Mr. Jorge J. White, Zimapan, Mexico. Received December 15, 1909.

"Cuttings of an orange that retails for 10 centavos each in Mexico City; it is small and extremely sweet, and I believe with care will make a fancy shipping orange. The barranca where they grow was settled by the Spanish padres, who, I believe, introduced the orange; owing to neglect by the Indians, who own all the trees, which are now very few, I suppose that the fruit has deteriorated, but careful cultivation and perhaps crossing might give a remarkably fine orange.

"The winters here are very mild; the soil, generally speaking, is very poor and full of gravel, and is also thin, not exceeding a meter in thickness; underlying the soil is the usual detritus—coarse boulders—found in the beds of mountain streams. The elevation is about 4,000 feet above sea level." (*White*.)

26399 to 26406. VIGNA UNGUICULATA (L.) Walp.**Cowpea.**

From Mount Selinda, Rhodesia, South Africa.

Presented by Mr. C. C. Fuller, through Mr. W. L. Thompson, M. D. Received November 27, 1909.

Seeds of the following, with descriptions of same:

26399. Small, black.

26403. Maroon.

26400. Large, black.

26404. Small, buff.

26401. Small, speckled.

26405. Large, buff.

26402. Large, speckled.

26406. Cloudy violet and buff.

26408. GOSSYPIUM HIRSUTUM L.**Cotton.**

From Northern Arabia. Presented by Dr. Arthur K. Bennett, Arabian Mission, Busrah, Persian Gulf, via Bombay. Received November 20, 1909.

"Seed of a cotton which I found while traveling across northern Arabia. The women were weaving a light-brown cloth from this kind of cotton, and they say it is bigger and better than the white." (*Bennett.*)

26411. IPOMOEA SINUATA Ortega.

From Iguala, Mexico. Collected by Dr. David Griffiths. Received December 23, 1909.

"Seeds of a native ipomœaceous vine which climbs over shrubs in the valley of Iguala, Mexico. The vine itself is a handsome thing. I have not seen the flowers." (*Griffiths.*)

26412. CARYOPHYLLUS MALACCENSIS (L.) Stokes.**Large rose-apple.**

From Honolulu, Hawaii. Presented by Mr. J. E. Higgins, horticulturist, Hawaii Experiment Station. Received December 16, 1909.

"The mountain-apple, as it is locally known in Hawaii, is a very beautiful fruit of a very dark red color when at its best. It is about the size of a small pear and is of mild, rather pleasing flavor. The tree grows to a height of 40 or 50 feet in the wild condition in the mountains and moist gulches, and bears fruit freely. The usual season is from June to September. It is probable that some interesting results would be obtained by the crossing of this species with some of the more highly flavored species of *Eugenia*, such as *E. michelii* (= *E. uniflora*)." (*Higgins.*)

Distribution.—Throughout the Polynesian islands; varieties in cultivation in Bengal and Burma.

26413. PSIDIUM LAURIFOLIUM Berg.

From Port of Spain, Trinidad. Presented by Mr. F. Evans, acting superintendent, Botanical Department, Department of Agriculture. Received December 10, 1909.

"Jelly made from this fruit has been found to be of considerable value, from the fact that by its agreeable acidity it is quite distinct in flavor from the ordinary guava jelly made from *Psidium guajava* and *P. polycarpum*. It is also said that it 'jellies' much quicker than the common West India guava.

"It is a plant, therefore, which is likely to become widely distributed on account of its usefulness. The jelly, with soda and ice, makes an excellent 'soft' or 'cool' drink equal to or better than any of the ordinary fruit sirups." (*Extract from Bulletin 57, Trinidad Botanical Department, January, 1908.*)

Distribution.—The vicinity of Masaya, near the Pacific coast of Nicaragua.

26414 to 26418. CITRULLUS VULGARIS Schrad.**Watermelon.**

From Salisbury, Md. Grown by Mr. W. F. Allen; presented through Prof. W. W. Tracy. Received December 15, 1909.

Seeds of the following selections made from the Roumanian watermelons received through Consul Knowles; notes by Mr. Allen:

26414. Rind nearly white; yellow flesh; reddish-brown seeds.

26415. Striped rind; red meat; reddish-brown seeds.

26416. Rind nearly white; red flesh; reddish-brown seeds.

26414 to 26418—Continued.

26417. Striped rind; red flesh; black seeds.

26418. Rind nearly white; red flesh; small reddish-brown seeds. This variety was quite uniform, there being only one type; grown from the second lot of S. P. I. No. 22658, received May 14.

26421 to 26423.

From Hwai Yuan, via Nanking, China. Presented by Mr. Samuel Cochran, American Presbyterian Mission. Received October 15, 1909.

Seeds of the following; notes and native names by Mr. Cochran:

26421. *CITRULLUS VULGARIS* Schrad.

Watermelon.

"Hwang jang hsi kwa," yellow fleshed.

26422 and 26423. *BRASSICA PEKINENSIS* (Lour.) Skeels. **Pe tsai cabbage.**

26422. *T'ang pei ts'ai* (soup white vegetable).

Planted in spring, summer, and autumn by sowing thickly on freshly cultivated soil and then raking in. Ready for use in 20 to 30 days. Eaten boiled. It is also sometimes transplanted from the beds sown as above into rows, each bunch being a foot or so apart. It then grows into large, thick-stalked bunches which are pickled and eaten during the entire year. It is gathered at first hoarfrost when grown in this way, as the first frost kills it.

26423. *P'iao pei ts'ai* (dipper white vegetable).

So called from the shape of the leaf. Sown in beds in August and transplanted into rows in bunches, each clump being separate. It is transplanted in September or early October, and is ripe when snow falls; it continues to ripen through the winter in spite of frost and snow, but its quality is improved by being covered with straw.

26424 to 26439.

Procured by Mr. A. J. Perkins, of the firm of Jackson & Perkins, Newark, N. J., while making a trip through Japan. Received December 8, 1909.

Seeds of the following obtained in Japan, unless otherwise noted; descriptive notes by Mr. Perkins:

26424. *AKEBIA LOBATA* Decaisne.

A vine from which baskets are made at Aomori, Japan. It is used as an ornamental in the United States. Seeds of an especially large-fruited variety as well as a common kind are contained in this lot.

See No. 24744 for previous introduction and distribution.

26425. *CITRUS* sp.

Orange.

"*Yusu*." A Japanese sour orange, round and flat. Used as lemon and as a stock.

26426. *CITRUS TRIFOLIATA* L.

Seed from a tree in the Yokohama Nursery Co.'s grounds.

26427 and 26428. *CUCURBITA PEPO* L.

Squash.

26427. "*Chirimen*." Has a rough, knotted exterior; named after a kind of silk having rough knots in its texture.

26428. "*Kikuza*." Has a smooth exterior, as its name signifies.

Both these kinds are said to have yellow meat $1\frac{1}{2}$ inches thick which is of fine flavor when boiled.

26424 to 26439—Continued.

26429. *Diospyros kaki* L. f.

Persimmon.

These seeds are from nonastringent fruit.

26430. *Euonymus oxyphyllus* Miq.

From Botanical Gardens, Sapporo, Japan.

Distribution.—The vicinity of Port Chushan, Korea; also Japan.26431. *Fedia scabiosaefolia* (Fisch.) Trev.

"Omineshi." An ornamental herbaceous perennial from Morioka, Japan.

Distribution.—The provinces of Chihli, Shingking, Kiangsu, Chekiang, Fukien, Hupeh, and Kwangtung, in China; Korea, and Japan.26432. *Firmiana simplex* (L.) W. F. Wight

"Ao giri." From Morioka, Japan.

26433. *Hordeum distichon nudum* L.

Naked barley.

"Shiratama" (white grain). Winter barley, procured by Prof. Gentau Tamada, from Morioka, Japan.

26434. *Hordeum vulgare coeleste* L.

Barley.

"Marumi" (round seed). From Messrs. Aizawa & Co., Sapporo, Japan.

26435 and 26436. *Perilla nankinensis* (Lour.) Decais.

26435. White or green leaved variety.

26436. Purple-leaved variety.

Known in Japan as "Shiso;" edible, being used as a condiment in cooking and to color pickles in combination with *Prunus mume*.*Distribution*.—The provinces of Kiangsi and Szechwan, China; also Japan.26437. *Pithecolobium dulce* (Roxb.) Benth.

From Kapiolani Park, Honolulu, Hawaii. See No. 23457 for description.

26438. *Sesamum orientale* L.

Sesame.

Black seeded.

26439. *Zanthoxylum piperitum* (L.) DC.

"San-sho." A condiment, purchased in Hakodate.

Distribution.—Provinces of Shensi and Shantung, eastern China; the island of Port Hamilton, in the Korean Archipelago; and the woods on the mountain slopes in central Japan.26440. *Anona longiflora* S. Watson.

From Altadena, Cal. Presented by Mr. F. O. Popenoe. Received December 20, 1909.

Budwood taken from the tree which produced the seed sent in under S. P. I. No. 26298, which see for description.

26441. *Anona* sp.

From San Salvador, Salvador, Central America. Presented by Mr. H. F. Schultz, Ancon, Canal Zone, Panama. Received November 23, 1908.

"I obtained the seed of this *Anona* from a friend of mine whom I met in Panama and who mailed it to me from San Salvador, Salvador. When I saw him at Ancon he spoke very highly of these 'sugar apples' of his country; beyond his verbal descriptions, which were very general, I have no guide regarding the identity of the species." (Schultz.)

26442 to 26456.

The following seeds were turned over to this office by Dr. R. H. True, physiologist in charge of Drug-Plant, Poisonous-Plant, Physiological, and Fermentation Investigations, for distribution, December 27, 1909.

26442.	ATROPA BELLADONNA L.	Belladonna.
26443.	CALENDULA OFFICINALIS L.	Pot marigold.
26444.	CANNABIS SATIVA L.	Hemp.
26445.	CARUM CARVI L.	Caraway.
26446.	NEPETA CATARIA L.	Catnip.
26447.	CONIUM MACULATUM L.	Conium.
26448.	CORIANDRUM SATIVUM L.	Coriander.
26449.	DIGITALIS PURPUREA L.	Foxglove.
26450.	FOENICULUM VULGARE Hill.	Fennel.
26451.	INULA HELENIUM L.	Elecampane.
26452.	LOBELIA INFLATA L.	Indian tobacco.
26453.	ALTHAEA OFFICINALIS L.	Marshmallow.
26454.	MONARDA FISTULOSA L.	Horsemint.
26455.	SPIGELIA MARILANDICA L.	Maryland pinkroot.
26456.	SESAMUM ORIENTALE L.	Sesame.

White seeded.

26457 to 26459. HORDEUM spp. Hull-less barley.

From Nara, Japan. Procured by Mr. A. J. Perkins, from Dr. G. Nakamura, director, Experiment Station. Received December 22, 1909.

Seeds of the following; descriptive notes by Mr. Perkins:

26457. "Zun-paku-mugi." Pure white naked barley; produces 1.751 koko^u per tau (one-fourth acre) and is hardy.
26458. "Yane-hadake." This is hardy and produces more than 1 koko^u per tau.
26459. "Kama-ore." Produces 2.005 koko^u per tau and is useful for both grain and straw.

26460. CITRUS TRIFOLIATA L.

From Tokyo, Japan. Presented by Prof. Y. Kozai, director, Imperial Agricultural Experiment Station. Received December 27, 1909.

Large seeded. To be used for stocks.

26462 to 26465. TRIFOLIUM SUBROTUNDUM Steud. & Hochst.

From Adis Ababa, Abyssinia. Presented by Mr. Hoffman Philip, American minister. Received December 20, 1909.

Seeds from plants found in a shady garden; descriptive notes by Mr. Philip:

26462. Most profuse variety; full flower; large leaves light in center; grows to height of about 1½ feet.
26463. Full flower; small leaves; grows to height of about 1 foot; not very profuse.
26464. Grows to height of about 3 feet; not very erect; large leaves, all one color.
26465. Grows to height of about 2 feet; not very erect; very narrow leaf."

26470. SPONDIAS DULCIS Forst.**We fruit.**

From Monrovia, Liberia. Presented by Mr. E. L. Parker, commissioner of agriculture. Received December 30, 1909.

"The we fruit (pronounced vee) or Tahiti-apple. The tree is of rapid growth, highly ornamental, and attains a height of 50 feet in its native habitat. The golden-yellow fruits, about 2 to 3 inches in diameter, are produced in loose clusters. The brownish-yellow flesh partakes of the flavor of a pineapple and most people become very fond of the fruit when once accustomed to it.

"The we fruit is indigenous to the Society Islands and is now disseminated to most tropical countries. In Florida, where it has fruited in Miami and Lemon City for at least four years, it appears well adapted to well-drained land underlaid with coral limestone. It is a trifle less hardy than the mango, to which plant the we fruit is related." (*P. J. Wester.*)

Distribution.—Cultivated throughout the Tropics; probably native in the Polynesian islands.

PUBLICATION OF A NEW NAME.**26078. CAPRIOLA INCOMPLETA (Nees) Skeels.**



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U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 207.

B. T. GALLOWAY, *Chief of Bureau.*

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM JANUARY 1
TO MARCH 31, 1910:

INVENTORY No. 22; Nos. 26471 to 27480.

ISSUED MAY 4, 1911.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1911.

Mr. Harlan

U. S. DEPARTMENT OF AGRICULTURE.

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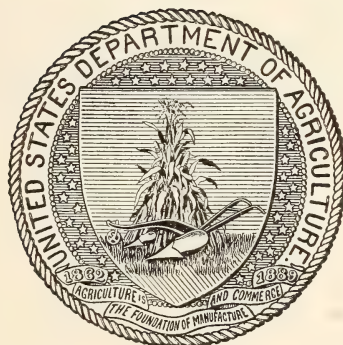
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Chief of Bureau, BEVERLY T. GALLOWAY.

Assistant Chief of Bureau, WILLIAM A. TAYLOR.

Editor, J. E. ROCKWELL.

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., December 28, 1910.

SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 207, of the series of this Bureau, the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from January 1 to March 31, 1910: Inventory No. 22; Nos. 26471 to 27480."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction, with a view to publication.

Respectfully,

WM. A. TAYLOR,
Acting Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.



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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM JANUARY 1 TO MARCH 31, 1910: INVENTORY NO. 22; NOS. 26471 TO 27480.

INTRODUCTORY STATEMENT.

This inventory, No. 22, is a record of seed and plant introductions received by the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry from January 1 to March 31, 1910. It contains 1,010 introductions, an increase of 588 over those of the quarter ended December 31, 1909.

Some of these introductions merit especial mention in this introductory statement. In Nos. 26471 to 26475 we have several interesting introductions from Kashmir, India, embracing a cherry (No. 26471), a peach (No. 26472), an apricot (No. 26473), a pear (No. 26474), and an apple (No. 26475). Five hardy drought-resistant Chinese pears come to us from Manchuria under Nos. 26485 to 26489. Another introduction of interest is a dry-land shrub related to Citrus (*Limonia acidissima*, No. 26496) from Kirkee, India. This will be especially valuable for breeding purposes. No. 26511 is a wild pomegranate (*Punica protopunica*) from the island of Socotra, probably a prototype of the cultivated pomegranate. This was introduced for breeding purposes and as a suitable stock for the southwest sections of the country on which to graft the improved form. The first generation of potatoes from seed introduced from Chile (Nos. 26517 to 26535); a number of interesting species of wild clovers from the mountains of Turkey, for testing and breeding purposes (Nos. 26574 to 26578); a wild medicago (No. 26590) from the arid mountain regions of Algeria; seeds of the native hardy Manchurian pear (No. 26591) are all worthy of attention.

An introduction of considerable commercial value is the Black Monukka seedless grape of India. This was found by the writer in the greenhouses of the Royal Horticultural Society at Wisley, England, and sent in at his request by Rev. W. Wilks, secretary of the society. This adds a dark-purple seedless grape to the seedless grapes already in cultivation in America. A number of varieties of soy beans from Manchuria (Nos. 26643 to 26646) and two species of dry-land alfalfa from the Crimea (Nos. 26666 and 26667); *Medicago orbicularis* (No. 26673) from Balaklava, Crimea, an annual form found growing on dry, hilly slopes and on sterile, stony plains, and much relished by sheep and horses, will be of interest to forage-crop

experimenters. A new form of *Malus baccata*, from Nertchinsk, Siberia, introduced under No. 26681, is being used around St. Petersburg for hybridizing with *M. prunifolia* in an endeavor to obtain a hardier race of apples, and a new crab apple (No. 26682) said to be a better keeper than the American crab, the result of a cross between *M. baccata* and *M. prunifolia*, will attract the attention of the apple breeder.

The introductions from Nos. 26689 to 26730, inclusive, comprise 42 selected varieties of avocados from seedlings grown in Florida and imported from Cuba and Costa Rica. There are many fine types among these introductions that will be very valuable to growers of this new fruit in Florida and probably in southern California. Nine varieties of cherimoya (Nos. 26731 to 26739) have been selected from a number of seedlings grown in Florida, for their superior qualities. An interesting relative of our wild rice is introduced under No. 26760, *Zizania latifolia*. This wild rice is a native of and is cultivated extensively in China and Japan for its edible shoots and for a fungous growth that develops on the inflorescence which is said to be edible when in a young state. *Pyrus salicifolia* (No. 26763) is a wild pear from the hills near Sebastopol, Russia, where it is subjected to extremely dry conditions, and no doubt will prove valuable as a pear stock in our semiarid regions. Another introduction that will be valuable for the same regions, coming from the neighborhood of Sebastopol, is *Crataegus orientalis* (No. 26765). This is recommended as a stock for pears and for uses as an ornamental plant. In Nos. 26801 to 26811 is a very hardy race of olives that has withstood a temperature of about -2° F. without injury. These olives may be valuable for sections of Texas and California where heavy frosts prevail during the winter months.

No. 27310, *Amygdalus davidiana*, is another importation of this valuable plant that may mean much to the peach growers of the colder and semiarid sections of our country. A report comes to us from the Upper Mississippi Valley Plant Introduction Garden that young trees of this peach passed through the winter of 1909-10 without the slightest injury, while such well-known varieties as Chihli and Champion were more or less seriously injured. This wild peach promises to be very valuable for breeding work. Nos. 27362 and 27363 are Ohanez grapes (*Vitis vinifera*), famed for the extraordinary carrying and keeping qualities of their fruit. The fruits ripen late and are therefore adapted only to the warmer grape-growing sections.

Mr. W. F. Wight, Mr. H. C. Skeels, and Miss Mary A. Austin are responsible for the preparation of this inventory.

DAVID FAIRCHILD,

Agricultural Explorer in Charge

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,

Washington, D. C., November 19, 1910.

INVENTORY.

26471 to 26475.

From Kashmir, India. Presented by Mr. J. Mollison, Inspector General of Agriculture in India, Nagpur, Central Provinces. Received January 3, 1910.

Seeds of the following wild species; notes by Mr. Mollison:

26471. *PRUNUS CERASUS* L. Cherry.

"This tree bears fruit when 5 years old and 10 feet high."

26472 to 26474. "These trees bear fruit when 4 years old and 15 feet high."

26472. *AMYGDALUS PERSICA* L. Peach.

26473. *PRUNUS ARMENIACA* L. Apricot.

26474. *PYRUS COMMUNIS* L. Pear.

26475. *MALUS SYLVESTRIS* Mill. Apple.

"This tree bears fruit when 6 years old and 20 feet high."

"These seeds are sown in October or in March. If sown in October, the seedling comes out in March, but if sown in March, it comes out in April."

26476. *PENNISSETUM PEDICELLATUM* Trin.

From Senegal, West Africa. Presented by Dr. L. Trabut, Government Botanic Gardens, Algiers, Algeria. Received January 4, 1910.

"Variety *occidentale*."

Distribution.—Rajputana and Banda, in India, and in tropical Africa.

26477 to 26484. *PHOENIX DACTYLIFERA* L. Date.

From Tripoli-in-Barbary, North Africa. Procured by the American vice consul, at the request of Mr. William Coffin, formerly American consul. Received December 15, 1909.

Seeds of the following:

26477. *Bayoudi*. 26481. *Hallaoui*.

26478. *Brunsi*. 26482. *Hammuri*.

26479. *Cabouni*. 26483. *Hurra*.

26480. *Hadruri*. 26484. *Limsi*.

26485 to 26489. *PYRUS* spp.

From Manchuria. Presented by Mr. Edward C. Parker, agriculturist, Bureau of Agriculture, Industry and Commerce, Mukden. Received January 3 and 4, 1910.

Cuttings of the following; descriptive notes by Mr. Parker:

"All these pears are very hardy and resistant to droughts and high, drying winds. They are cultivated by the Chinese in many places among the hills of southwestern

26485 to 26489—Continued.

Manchuria, as far north as 43° to 44° north latitude. Their power to resist drying winds and drought is the most notable character they possess. The fruits are all hard, maturing late and keeping all winter. The quality of the fruit is not anywhere near as good as the American *Bartlett* or *Anjou*; it is quite edible, however, and might be valuable for culture in such regions as North and South Dakota, where hot winds, short periods of drought, and cold winters form a climate very similar to the native habitat of these trees; they might also be used for grafting stocks."

26485. "(No. 6.) Chinese name *Ya li*. A very popular pear in Chinese markets; of medium size, shaped like the American *Bartlett* and of a yellowish-white color; flesh rather coarse and not highly flavored, keeps all winter. Kwangning is the oldest and best known producing center of this pear."

26486. "(No. 7.) Chinese name *Hung li*. Fruit is small, reddish yellow in color, and in shape similar to *Whitney* crab apples. Flesh of fruit coarse and not highly flavored."

26487. "(No. 8.) Chinese name *Chang pao li*. Fruit is yellowish white in color; shape long and oval; flesh of fruit coarse and not highly flavored."

26488. "(No. 9.) Chinese name *Yuen pao li*. Fruit is yellowish white in color, shape and size of a small round apple, flesh coarse and not highly flavored."

26489. (No name or description received with this lot of cuttings.)

26490 to 26494.

From Settsu, near Kobe, Japan. Procured by Mr. Albert J. Perkins, from the Japan Nursery Company. Received January 3, 1910.

Cuttings of the following:

26490 and 26491. DIOSPYROS sp.

Persimmon.

26490. *Hachiya*.

26491. *Fuyu kaki*.

26492. PAPHYRIUS sp.

Kogo.

26493. PAPHYRIUS PAPHYRIFERA (L.) Kuntze.

26494. CITRUS AURANTIUM L.

Orange.

"*Natsu-mikan*." See No. 22670 for description.

26496. LIMONIA ACIDISSIMA L.

From Kirkee, India. Presented by Mr. G. A. Gammie, Imperial Cotton Specialist. Received January 5, 1910.

"This is a shrub or small tree growing in dry situations in India, sometimes at a height of as much as 4,000 feet. The fruits are very small, but are occasionally used as a condiment by the natives. The wood is hard and suitable for parts of machinery where great strength and toughness are required. This plant belongs to the orange family and is introduced primarily in connection with the experiments now in progress in the breeding of new types of citrus fruits and stocks for the same." (*W. T. Swingle*.) (Seed.)

Distribution.—On dry hills in the northwestern Himalayas, ascending to 4,000 feet, on the Monghyr Hills in Behar, in Assam, and from the Bombay Ghats and Coromandel southward in the western peninsula of India. It occurs also in the Province of Yunnan, southwestern China.

26499 and 26500.

From Kavali, Nellore district, India. Presented by Rev. E. Bullard. Received January 10, 1910.

Seeds of the following; notes by Rev. E. Bullard:

26499. ERYTHRINA INDICA Lam.

"A useful hedge tree used commonly here around betel-leaf gardens. It is leguminous, does not have very spreading limbs, grows rapidly in almost any soil, and attains a height of 30 or 40 feet. It can be transplanted and propagated by cuttings of any size; these require watering for a time until well rooted. It is planted close together as a hedge, a foot or less apart, at first, and the spaces between are filled in with wild sugar cane. The leaf of the *Badidi* is excellent fodder for cattle, sheep, and goats—probably for any animals. The wood is also used in making some ordinary implements. By being cut low it forms an excellent hedge for keeping out animals. The Telugu name is *Badidi* or *Badishe*."

Distribution.—Throughout India and the Polynesian Islands; often cultivated.

26500. MELIA AZEDARACH L.

"A tree called *Turaka vyapa* in Telugu, or a variety of the margosa; it is much inferior, however, to the usual margosa, though useful as a quick-growing tree. Its seed contains an oil used for medicinal purposes."

26501. RHEUM NOBILE Hook. f. and Thoms.

From Sikkim, E. Himalaya, India. Presented by Capt. A. T. Gage, superintendent, Royal Botanic Garden, Sibpur, near Calcutta, India. Received January 10, 1910.

"The individual plants of *Rheum nobile* are upward of a yard high, and form conical towers of the most delicate, straw-colored, shining, semitransparent, concave, imbricating bracts, the upper of which have pink edges, the large bright, glossy, shining, green radical leaves, with red petioles and nerves, forming a broad base to the whole. On turning up the bracts, the beautiful membranous, fragile, pink stipules are seen, like red silver-paper, and within these, again, the short-branched panicles of insignificant green flowers.—The stems of this plant (called '*Chuka*' by the inhabitants) are pleasantly acid, and much eaten.—The seeds should be planted in peat soil and rockwork, and kept very cool and damp." (J. D. Hooker. *Illustrations of Himalayan Plants*, 1855, pl. 19.)

Distribution.—The alpine slopes of the Himalaya Mountains, at an elevation of 13,000 to 15,000 feet, in the Province of Sikkim, northeastern India.

26502 to 26504.

From Chinese Turkestan. Presented by Mr. E. Cotes, Simla, India. Received November 17, 1909.

Seeds of the following:

26502. PRUNUS ARMENIACA L.

Apricot.

26503. AMYGDALUS PERSICA L.

Peach.

26504. CITRULLUS VULGARIS Schrad.

Watermelon.

26505 and 26506. SESAMUM ORIENTALE L.

Sesame.

From China. Presented by Rev. J. M. W. Farnham, Shanghai, China. Received January 5, 1910.

Seeds of the following:

26505. Black seeded.

26506. White seeded.

26509 and 26510. MANGIFERA INDICA L.**Mango.**

From Kingston, Jamaica. Presented by Mr. Aston W. Gardner, Tangley Fruit Company. Received January 14, 1910.

26509. *Maharajah.* "Cuttings from a tree grown in my orchard. This special fruit has realized very high prices in London and New York." (*Gardner.*)

26510. *Mangalore.*

(Cuttings.)

26511. PUNICA PROTOPUNICA Balf. f.

From Edinburgh, Scotland. Presented by Dr. Isaac Bayley Balfour, director, Royal Botanic Garden. Received January 17, 1910.

"This is a small tree which grows in abundance over the plateau sloping southward from the Haghier peaks. In general habit it is not unlike the pomegranate, but its leaves are larger and coarser and it lacks the delicate character of the foliage of that species. The flowers, too, are somewhat smaller and their turbinate base is more angular; the fruit is very much smaller in size." (*Balfour, Botany of Socotra, 1888, Pl. 25, p. 96.*)

"It was considered desirable to introduce this plant, which, aside from the ordinary pomegranate, is the only species of the genus *Punica* and is possibly the ancestral form of the cultivated pomegranate, in order to test its value as a drought-resistant stock upon which to graft pomegranates in the hottest part of the Southwest." (*T. H. Kearney.*) (Cuttings.)

Distribution.—Known only from the island of Socotra, on the east coast of Africa.

26517 to 26535. SOLANUM spp.**Potato.**

Grown at Arlington Experimental Farm, Virginia, under the supervision of Mr. W. V. Shear, Office of the Horticulturist. Turned over to this office for distribution January, 1910.

Tubers of Chilean potatoes, first generation grown from seed as follows; notes by Mr. Shear:

26517. Grown from S. P. I. No. 23167. "Small tubers, round to oblong; skin smooth; eyes few and shallow; color yellowish white."

26518. Grown from S. P. I. No. 23173. "Elongated, cylindrical, somewhat flattened, uniform tubers; eyes numerous, shallow; skin smooth, flesh-colored; size variable, small to medium."

26519. Grown from S. P. I. No. 23184. "Tubers roundish, flattened at the ends, uniform; size small; skin smooth; eyes few, medium in depth; color violet."

26520. Grown from S. P. I. No. 23191. "Small to medium-sized tubers; shape round to oblong, uneven; eyes numerous and deep; color purple."

26521 to 26524. Grown from S. P. I. No. 23168.

26521. "Small tubers, ovoid, flattened; eyes medium depth; color flesh."

26522. "Small tubers, oblong, slightly flattened; eyes many and deep; color variable, yellowish to violet."

26523. "Tubers oblong, cylindrical, variable; eyes medium depth, uniform; color yellowish splotched with violet."

26524. "Tubers small, oblong, pointed at bud end; shape uniform, slightly flattened; eyes shallow; color yellowish with slight tinge of violet."

26517 to 26535—Continued.

26525 to 26531. Grown from S. P. I. No. 23178.

26525. "Tubers medium small, round, uneven; eyes deep, numerous; color deep violet."

26526. "Tubers $\frac{1}{2}$ to 2 ounces in weight; shape round to oblong, flattened, variable, uneven; eyes many, deep; color varying from flesh to light violet."

26527. "Tubers ovoid, uneven, smooth; eyes numerous, deep; color purple, yellowish around eyes."

26528. "Tubers round to ovoid, variable and uneven; skin rough; eyes numerous, medium; color yellowish white."

26529. "Tubers large, elongated, cylindrical, uneven; eyes many and deep; color yellowish with small patches of violet."

26530. "Tubers small to medium; shape round to ovoid; uneven, knobby; eyes numerous, shallow; color mottled violet and yellow."

26531. "Medium-small tubers; shape ovoid, flattened, uneven; eyes numerous, deep; skin rough; color yellowish, mottled with violet."

26532 and 26533. Grown from S. P. I. No. 23185.

26532. "Tubers small to medium; oblong, variable; eyes numerous and variable; color violet."

26533. "Tubers round, inclined to be flattened at each end; uneven; eyes few, variable."

26534 and 26535. Grown from S. P. I. No. 23194.

26534. "Tubers small, ovoid to oblong, pointed at bud end, uniform; smooth; eyes numerous, medium depth; flesh-colored."

26535. "Tubers small; shape variable, ovoid, flattened; skin smooth; eyes few, shallow; light yellow mottled with violet."

26536. MEDICAGO SATIVA L.**Alfalfa.**

Presented by Mr. D. S. Elder, El Centro, Imperial Co., Cal., through Mr. Charles J. Brand. Received December, 1909.

"This alfalfa is ordinary American alfalfa and was grown 3 miles west of Brawley in the Imperial Valley of California from seed secured by Mr. Elder from his brother in Wyoming. It was grown in a loose, sandy soil on a field which was without water from April, 1906, until May, 1908. The ditch which supplied this field was dry during this period on account of the Colorado River breaking through its banks and flowing into the Salton Sea. No records of rainfall are available for Brawley, but it is estimated that the precipitation for the two years was about 2 inches each. Part of this alfalfa was cut and part pastured during the time that it was without water. The present sample should be of use in selections for drought resistance." (*Brand.*)

26537 to 26539. MEDICAGO SATIVA L.**Alfalfa.**

From Sacaton, Ariz. Grown under the supervision of Mr. Charles J. Brand on the Testing and Demonstration Garden in cooperation with the Office of Indian Affairs and received through Mr. William L. Flanery, January, 1910.

Seeds of the following; notes by Mr. Brand:

26537. "Mixed seed from a plat in which over 100 regional strains of alfalfa are being grown, intended for use in mass selection work."

26538. "First crop of Peruvian alfalfa, grown in hills $2\frac{1}{2}$ feet apart, rows 3 feet apart. It yielded at the rate of about 6 bushels per acre. The seed plat received only one irrigation up to the time of cutting the first crop."

26537 to 26539—Continued.

26539. "Second seed crop of Peruvian alfalfa from the same plat that produced No. 26538. Both of these lots of seed are second-generation progeny of S. P. I. No. 9303. The first-generation seed was produced at Yuma, Ariz., from the original lot."

26540. MEDICAGO SATIVA L.**Alfalfa.**

From Tappen, N. Dak. Grown by Mr. W. H. Niles in cooperative experiments with Mr. Charles J. Brand. Received January, 1910.

Grimm. "This seed was produced in 1909 from an acre plat seeded in comparison with 15 others at Tappen, N. Dak., in the spring of 1905. To date it has proven the hardiest variety in the experiment, which includes seed from a number of points in the United States, Germany, France, and Russia." (*Brand.*)

26543. AMYGDALUS COMMUNIS L.**Almond.**

From mountainous regions of Algeria, height about 3,300 feet. Presented by Dr. L. Trabut, Algiers, Algeria. Received January 18, 1910.

"A wild form of tolerably large size, robust, and very resistant to drought. Would be a good stock." (*Trabut.*)

26561. BAUHINIA MONANDRA KURZ. (?)

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received January 18, 1910.

26562. CYDONIA sp.**Quince.**

From Shanghai, China. Presented by Rev. J. M. W. Farnham. Received January 21, 1910.

"These quinces grow very large, but are coarser and harder than American varieties. The one from which part of these seeds were taken was 12 inches in circumference and about 5 inches long." (*Farnham.*)

26563 and 26564. BRASSICA OLERACEA CAPITATA L.**Cabbage.**

From Manchuria. Presented by Mr. A. A. Williamson, American vice and deputy consul, Dalny, Manchuria. Received January 18, 1910.

Seeds of the following:

26563. From Kinchow.

26564. From Chefoo.

26566. VITIS VINIFERA L.**Grape.**

From Besni, in the Deyarbekir Valley, Turkey. Procured by Mr. Wm. W. Masterson, American consul, Mamuretul-Aziz (Harput), Turkey. Received January 20, 1910.

Cuttings of the following. The white and the black variety are contained in this shipment, but this was not learned until some time after it had been received:

Besni. "This grape is long in shape, similar to the *Thompson Seedless*, and from what I have heard, larger than *Muscat*, but not having as many seeds, only one or two. When it is dried, it is claimed it has an oblong shape and has a clearer and lighter color than a *Muscat*." (*Extract from letter of Mr. Z. J. Josephian, which was inclosed in one from Miss Dorothy Farmer, Oakland, Cal., received February 26, 1908.*)

"I have never tasted such grapes anywhere as I have here, and the raisins made from these particular grapes (*Besni*) are of a wonderfully fine flavor and very large, and I think if such vines could be cultivated in America, it would prove a wonderful addition to our grape industry." (*Masterson.*)

26567 and 26568.

From Japan. Purchased from the Yokohama Nursery Company, Yokohama, Japan. Received January 18, 19, and 20, 1910.

Seeds of the following:

26567. CITRUS TRIFOLIATA L.

From Kiushiu. "Up to Fukuoka this tree is cultivated, possibly as far north as Tsushima, though we are not certain. Prof. Ikeda says its north limit extends to 37° north latitude. The fruits from Kiushiu are larger than those produced here (Yokohama)." (*Yokohama Nursery Company.*)

26568. CITRUS sp.

Yuzu. "Orange grafted on this stock is said to be a little more sour than when grafted on *Citrus trifoliata*." (*Yokohama Nursery Company.*)

"*Yuzu* is a large evergreen tree bearing round, medium-sized fruit, which is very acid, and has a coarse, thick rind. The fruit is used in Japan in place of the lemon, which is used in this country. The pulp cells are 12 or 13 in number, having 2 or 3 seeds in each. This *Yuzu* is so hardy that the bearing fruit can be seen when the ground is covered with snow more than 2 feet deep. In some sections of Japan the *Yuzu* is considered better than *Citrus trifoliata*, as trees grafted on it grow better and live longer than when grafted on *Citrus trifoliata*. When kumquats are grafted on *Yuzu* they weigh more than they do when grafted on *Citrus trifoliata* and have a smoother and more reddish-colored rind." (*Extract from a letter of Mr. Kizano contained in a letter from Mr. Walter T. Swingle, dated April 12, 1909.*)

26570 to 26579.

From the moister mountain regions of Asia Minor lying 25 to 30 miles from the Mediterranean, 3,000 to 4,000 feet above sea level, in lime and sandy soils. Presented by Mrs. F. A. Shepard, Adana, Turkey in Asia. Received January 3, 1910.

Seeds of the following:

26570. AVENA SATIVA L.

Oat.

26571. PISTACIA TEREBINTHUS L.

Distribution.—The countries bordering on the Mediterranean Sea, from Bozen, in Austria, to Syria and Palestine.

26572. LATHYRUS sp.**26573. MEDICAGO ORBICULARIS MARGINATA (Willd.) Benth.****26574. TRIFOLIUM PILULARE Boiss.**

Distribution.—Stony and shady hills and mountain slopes in Asia Minor, extending from Smyrna through Mesopotamia and Syria.

26575. TRIFOLIUM sp.**26576. TRIFOLIUM sp.****26577. TRIFOLIUM sp.****26578. TRIFOLIUM sp.****26579. VICIA sp. (Several species mixed.)****26580. VIGNA CATJANG (Burm.) Walp.**

From Richmond, New South Wales, Australia. Presented by Mr. H. W. Potts, Hawkesburg Agricultural College. Received January 21, 1910.

Poona.

26581. ANDROPOGON CARICOSUS L.

From Antigua, Leeward Islands, British West Indies. Presented by Mr. S. Jackson, curator, Botanic Station. Received January 15, 1910.

"*Hay grass*. This is an East Indian grass, and in the West Indies, at present, is only found in Antigua. The history of its introduction is obscure. It is readily established, and once this is done takes possession of the land to the exclusion of other grasses. It grows on flat pasture areas, and when cut at the right time makes excellent hay." (*Extract from the Agricultural News, May 1, 1909, p. 131.*)

Distribution.—On the plains and low hills of India, from Scind to Burma; in the Province of Yunnan, China; and in Ceylon, Mauritius, and Timor.

26590. MEDICAGO SATIVA GAETULA Urb.

From Aures, Algeria. Procured by Mr. A. Clavé, director, Academy of Algiers, Oued-Zenati, Algeria. Received January 22, 1910.

"A wild form, said to occur in arid, exposed situations, and presumably very drought resistant." (*J. M. Westgate.*)

Distribution.—Slopes of the Atlas Mountains in the vicinities of Batna and Biskra, Algeria.

26591. PYRUS sp.**Pear.**

From Manchuria. Presented by Mr. Edward C. Parker, agriculturist, Bureau of Agriculture, Industry, and Commerce, Mukden. Received January 24, 1910.

"Seeds of the native Manchurian pear. I am of the opinion that the pear seedlings, when tested out in western nurseries or used for grafting purposes, will prove more valuable than the scions (S. P. I. Nos. 26485 to 26489)." (*Parker.*)

26592. VIGNA UNGUICULATA (L.) Walp.**Cowpea.**

From Millard, Arkansas. Presented by Mr. J. L. Forlines. Received January 24, 1910.

"Similar to *Taylor Crowder* but with the micropylar end white. The original seed said to have been found in the craw of a wild goose." (*C. V. Piper.*)

26593 to 26596.

From Mamuretul-Aziz (Harput), Turkey. Presented by Mr. Wm. W. Masterson, American consul. Received January 21 and 22, 1910.

Seeds of the following; notes by Mr. Masterson:

26593. AMYGDALUS PERSICA L.**Peach.**

"This peach is rather large, has an excellent flavor, with the ordinary stone, but a peculiar thing is, it has a smooth, tough skin of a mottled red and green color, like an apple, but with the ordinary peach shape.

"One of the great drawbacks in handling peaches in America is the easily broken, fuzzy skin; in addition, this fuzz is exceedingly uncomfortable to the touch. This new peach is perfectly smooth, without the slightest sign of fuzz; it is of a size a little larger than the average shipping peach of America, grows on the same kind of a tree, and instead of its being a budded or hybrid fruit as I supposed, it is grown from the seed, and in this instance like produces like."

26594 and 26595. ELAEAGNUS ANGUSTIFOLIA L.**26594.** Large fruited.**26595.** Small fruited.

"Trebizond date. This might be called a shrub. It grows in clusters to a height of some 8 or 10 feet and has a few rather sharp thorns on each limb.

26593 to 26596—Continued.

The leaf is rather long for its width, is shaped something like a willow leaf, and, like some willows, the leaf is silvery white underneath and a rich green on top. In the spring it has a wonderfully fragrant blossom, and in the autumn a fruit is matured that looks very much like the commercial date, although not so rich and sweet, but the poor of the country are sometimes reduced to eating it to a considerable extent. These bushes are particularly adapted to hot, dry climates where only occasionally a little water is given to them by irrigation. They are rapid growers, and are used in this country for hedges surrounding the fields for turning cattle. They are capable of standing a good, sharp freeze, as it frequently falls to 15° or 20° F. in this high altitude, and as this much cold has no effect on them they may be able to stand much colder weather.

"The idea I particularly have in mind in mentioning this plant is its superiority as a hedge over the Osage orange that is so commonly used in our country for the same purpose. They make a much more beautiful show than the Osage, grow very rapidly, are very bushy and thick, can be easily trimmed and kept in order, and as a novelty and something new would likely be much appreciated by our people. They grow very readily from cuttings or from seed and require but little attention."

26596. VICIA FABA L.

Horse bean.

"This is called *Bakla* in Turkish. In addition to the beans the stalks are fed to cows and are said to be wonderful milk producers, and horsemen declare the stalks to be exceedingly cooling feed for horses during the summer. They are not as good as our best class of beans as a vegetable, but they have one merit—they are the first real garden vegetable in the spring after onions and lettuce, being a month earlier than the ordinary bunch beans. They are rather strong in flavor, and coarse, but among these people they are in great demand."

26598 to 26602.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Transvaal Department of Agriculture. Received January 17 and 18, 1910.

Seeds of the following:

26598. INDIGOFERA sp.

26599. DIOSPYROS SENEGALENSIS Perrott.

See No. 25634 for previous introduction.

26600. PITTOSPORUM VIRIDIFLORUM Sims.

Distribution.—An erect shrub, found in the woods along the southeastern coast of Cape Colony, from the Knysna district to the vicinity of Umtata, in Kaffraria.

26601. ALOE TRANSAVALENSIS Kuntze.

Distribution.—The vicinity of Pretoria, Transvaal.

26602. (Undetermined.)

"Rhodesian teak."

"A typical tree of dryish regions." (Davy.)

26603. ANONA CHERIMOLA Miller.

Cherimoya.

From Orange, Cal. Presented by Mr. C. P. Taft. Received January 27, 1910.

Golden Russet. "This variety originated or at least first fruited near Villa Park, Cal. I am told that the plant came from London, England. I do not think that they were budded trees, though they may have been. In form the fruit resembles a

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26603—Continued.

flattened cone and weighs $1\frac{1}{2}$ to 2 pounds, the color is green with a slight yellowish tinge, and the flesh is of good quality; the trees are good bearers most years. I do not know of any other cherimoya that excels this variety in hardness." (*Taft.*)
(Cuttings.)

26604. AMYGDALUS DAVIDIANA (Carr.) Beiss., Sch. and Zab.

From Tientsin, China. Procured through Mr. Hamilton Butler, American vice consul general in charge. Received January 25, 1910.

See No. 22009 for previous introduction.

(Seed.)

26605 and 26606. VITIS VINIFERA L.

Grape.

From England. Presented by Rev. W. Wilks, M. A., secretary, Royal Horticultural Society, Vincent Square, Westminster, S. W., England, through Mr. David Fairchild. Received January 27, 1910.

Black Monukka. "This was sent to us from India many, many years ago. It is a very strong grower. The berries are individually small, as we do not thin them at all; they are black and seedless, one seed in perhaps 1,000 berries, and of a nice, refreshing juiciness. I like it very much, as one can strip off a handful of berries and crush them in his mouth without fear of biting on the seed, which to my mind is the greatest drawback in grapes, being of such an intensely horrible taste.

"In pruning *Black Monukka* it must not be cut quite back to last year's wood, as we do all other grapes, but must have two or possibly three eyes left on the subbranch, as it seems never to send out a spray of blossoms from the first eye as other grapes do." (*Rev. W. Wilks, letter of November 15, 1909.*)

26605. From the society's garden at Wisley.

26606. From Mr. Wilks's own garden at Shirley.

26607. LATHYRUS PARVIFOLIUS S. Watson.

From Sierra Madre Mountains, Cal. Presented by Mr. John Leenhouts, Los Angeles, Cal. Received January 17, 1910.

"I have seen these vines grow to a length of 40 feet. They seem to sprout from the roots every year and grow here plentifully over an area of, I would say, 160 acres. They seem to have originated on one of the mountain sides and to have been washed down by the rains until you find them half a mile down the foothills." (*Leenhouts.*)

Distribution.—Throughout the region west of the Rocky Mountains, from Washington to Mexico.

26612. LATHYRUS SATIVUS L.

From central Russia. Procured by Mr. Frank N. Meyer, agricultural explorer, from Mr. Engel, of the firm E. Immer & Co., Moscow. Received January 29, 1910.

"Mr. Engel claims that this plant yields 500 to 600 poods (1 pood=40 pounds) of seed per hectare, and will grow on soil where peas will not thrive. He strongly recommends making a test of it in the Middle West and says that the farmers of certain districts in central Russia consider it a favorite cattle fodder." (*Meyer.*)

26613 to 26618.

From Liesnoi Forestry Institute, near St. Petersburg, Russia. Procured by Mr. Frank N. Meyer, agricultural explorer, through the kindness of Mr. Wolff, forester in charge of the arboretum at Liesnoi. Received January 24 and 31, 1910.

26613 to 26618—Continued.

Cuttings of the following:

26613. *POPULUS BALSAMIFERA SUAVEOLENS* (Fisch.) Wesm. **Poplar.**

“(No. 364, December 17, 1909.) A pyramidal form of poplar of rather slow growth and of neat habits. Introduced originally from Turkestan; proves to be hardy in St. Petersburg. Recommended very much for small gardens in uncongenial climates.”

26614. *POPULUS BEROLINENSIS* Koch. **Poplar.**

“(No. 365, December 17, 1909.) Variety *Rossica*. This poplar is a form of the ordinary so-called Berlin poplar, but is proving to be much hardier than the type. It is, therefore, widely planted in and around St. Petersburg as a shade tree, mostly seen stiffly clipped, but when left alone grows into a rather tall tree of open, airy habits. Recommended for cold and uncongenial climates.” (*Meyer.*)

26615. *SALIX VIMINALIS SPLENDENS SONGARICA* Anderss. **Willow.**

“(No. 366, December 17, 1909.) A very hardy willow, of tall, bushy growth. Introduced from the Altai Mountains, central Asia. Is proving to be of much stronger and healthier growth in St. Petersburg than the European forms of *Salix viminalis*. Recommended for cold and uncongenial climates.” (*Meyer.*)

26616. *SALIX VIMINALIS PALLIDA* (Hort.). **Willow.**

“(No. 367, December 17, 1909.) A very strong-growing willow, introduced from Siberia, proving to be very much hardier and of more healthy growth in St. Petersburg than the ordinary forms of *S. viminalis*, therefore recommended for cold and uncongenial climates.” (*Meyer.*)

26617. *RIBES PETRAEUM* Wulf. **Currant.**

“(No. 368, December 17, 1909.) A large-fruited, very hardy species of red currant from the Altai Mountains, Turkestan, proving to be of much thriftier growth in St. Petersburg than the common red currants. May be valuable in breeding and in improving the red currant and extending its culture further northward in the United States.” (*Meyer.*)

26618. *ROSA GALLICA* $\times$ —?

“(No. 369, December 17, 1909.) A semidouble form, having rose-red flowers, and being extremely floriferous. Perfectly hardy in the severe climate of St. Petersburg, and proves there to be one of the most satisfactory garden roses. Recommended as an ornamental garden shrub of small dimensions in the upper Mississippi Valley States.” (*Meyer.*)

26619 and 26620. *HIBISCUS SABDARIFFA* L. **Roselle.**

From Miami, Fla. Grown at the Subtropical Garden. Received January 29, 1910.

Seeds of the following:

26619. “The seed from which this number was grown was presented to the Department by Mr. E. N. Reasoner in 1909, he having obtained same from the West Indies.

“This variety is distinguished by its green leaves and stems, and less robust growth than the ordinary roselle. The calyxes are small and whitish in color. Mr. A. S. Archer, Antigua, British West Indies, says that in the West Indies the calyxes of this variety are not used for jelly and jam on account of the lack of color. It is, however, used in making a wine which is prepared as follows: The fruit is picked when fully ripe and the seed pods removed, after which the calyxes are washed in cold water and put into a

26619 to 26620—Continued.

stone jar—a metal jar will not do, as corrosion of the metal by the acid makes the fluid poisonous. Fill the jar with calyces and press firmly, then pour on enough cold water to cover the calyces and leave for 18 hours. Pour off liquid and sweeten it with best refined sugar, making it rather sweet. Pour the liquid into bottles, leaving a few inches of air space, and place in each bottle 2 or 3 bruised cloves. The corks should be well wired so that the gases generated during the fermentation can not force them out. The wine is fit to use after about three days, and has the color of champagne and is almost equal to it in taste.

“The calyces of the red variety (S. P. I. No. 26620) may be utilized in the same way, but they make a red wine.” (*Wester.*)

26620. *Victor.* “A few roselle plants were obtained from Mr. W. A. H. Hobbs, Coconut Grove, Fla., in 1904, and planted in the Subtropical Garden at Miami. Some of these plants bore very much larger calyces than the rest and seed was saved from these for breeding purposes. The selection work from this stock has been carried on from year to year with the result that a strain of roselle has been obtained that has much larger calyces than the common kind and which has been named *Victor*. In south Florida the plants of this variety are more dwarfed than those of the common kind, seldom exceeding 5 feet in height. On the richer soil in the Gulf States farther north it is of exceedingly robust growth, frequently attaining a height of more than 8 feet.

“The measurements of the calyces are 49 mm. in length and 28 mm. in diameter. They are strongly ribbed longitudinally and frequently inclined to be convolute at the apex.

“The seed may be planted where the plants are to grow, a few to each hill, 4 to 8 feet apart, in rows 6 to 10 feet apart, according to the fertility of the land and the moisture supply, or the seed may be sown in a seed bed and the plants transplanted to the field when they are 3 to 4 inches high. They do not succeed on poorly drained land. The roselle plant is peculiar in that no matter what time seed is planted it does not bloom until the latter part of October, the first calyces being ready for picking 15 to 18 days from the time of blooming, consequently, the plant can be grown for its fruit only in the extreme south. A fruit sirup may be made from the leaves and tender stems of the plant, and jelly has also been obtained, but it lacks the brilliant color and also the firmness of the jelly made from the calyces.” (*Wester.*)

26621 to 26642. MEDICAGO SATIVA L.**Alfalfa.**

From Stockton, Kans. Grown under the supervision of Mr. Charles J. Brand, on the farm of Mr. E. Bartholomew, Stockton, Kans. Received January, 1909, and numbered for convenience in recording distribution, January 28, 1910.

“The following samples of seed were all produced in a comparative test of the behavior of the varieties in cultivated rows.” (*Brand.*)

26621. Colorado. “Grown from S. P. I. No. 12398.”

26622. Montana. “Grown from S. P. I. No. 13237.”

26623. Germany. “Grown from S. P. I. No. 12748, the Eifeler lucern, a strain of alfalfa that is highly prized in the restricted area of southern Germany, including the Rhine Province and Hesse. It is grown especially in the region known as the Eifel, a range of hills reaching a maximum height of about 2,500 feet. It is not a region of great cold, the mean for the coldest month being practically identical with the mean for November at St. Paul, Minn. The Eifel has a mean annual rainfall of 25 to 36 inches.” (*Brand.*)

26621 to 26642—Continued.

- 26624.** Wyoming. "This seed was grown from P. L. H. No. 3253, which was collected from an individual plant growing without irrigation in a tough prairie sod near Cheyenne, Wyo. The parent plant was located in a pasture where it had received decidedly harsh treatment. This strain is quite uniform, and proved to be one of the most drought resistant, as well as one of the best seed producers in the experiment." (*Brand.*)
- 26625.** Buffalo, N. Y. "Grown from S. P. I. No. 19896."
- 26626.** *Turkestan.* "Grown from S. P. I. No. 14786."
- 26627.** Utah. "Grown from S. P. I. No. 12409."
- 26628.** *Turkestan.* "Grown from P. L. H. No. 3252, which was grown at the South Dakota experiment station, and originally procured from Tashkend, Turkestan."
- 26629.** Ecuador. "Grown from S. P. I. No. 14972. This is the famous *Guaranda* alfalfa, of Ecuador, which resembles very strongly the Peruvian alfalfa described in Bulletin No. 118, of the Bureau of Plant Industry. During the winter of 1907-8 this strain killed out quite severely, the present seed being from the surviving plants. At Fallon, Nev., Mr. F. B. Headley reports that the *Guaranda* strain will yield four cuttings a year to three of the ordinary kind. Similar reports have been received concerning it from other sections." (*Brand.*)
- 26630.** Kansas. "Grown from S. P. I. No. 19508."
- 26631.** Nebraska. "Grown from P. L. H. No. 3228, which was procured from Mr. Lewis Brott, Sextorp, Nebr."
- 26632.** New York. "Grown from S. P. I. No. 13291."
- 26633.** Texas. "Grown from S. P. I. No. 12702."
- 26634.** Arizona. "Grown from S. P. I. No. 13437."
- 26635.** Kansas. "Grown from S. P. I. No. 12671."
- 26636.** *South Dakota 167.* "This seed was grown from P. L. H. No. 3251, the so-called *Baltic* alfalfa, produced in Prof. W. A. Wheeler's experiments at Highmore, S. Dak., in 1906. In a comparative test for hardiness of 68 kinds at Dickinson, N. Dak., this variety ranked fifth." (*Brand.*)
- 26637.** Russia. "Grown from S. P. I. No. 13857."
- 26638.** Ecuador. "See note under No. 26629."
- 26639.** *Turkestan.* "Grown from S. P. I. No. 9453."
- 26640.** *Algerian.* "Grown from S. P. I. No. 9322."
- 26641.** Tunis. "Grown from S. P. I. No. 12846, the prized *Oasis* alfalfa obtained by Mr. T. H. Kearney from the Kebilli Oasis, Tunis. This strain is not hardy north of Kansas, and is not hardy enough without selection to be of use outside of the Southwest. It produces a very fine quality of hay." (*Brand.*)
- 26642.** France. "Grown from S. P. I. No. 12695."

26643 to 26646. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

From Mukden, Manchuria. Presented by Mr. Nelson T. Johnson, American vice consul-general in charge. Received January 21, 1910.

Seeds of each of the following; quoted notes by Mr. Johnson:

- 26643.** Black, very similar to *Cloud*, No. 16790. "*Ho tou* or *Hei tou* (black bean) as they are known colloquially. These beans are used solely as food for cattle and horses."

26643 to 26646—Continued.

26644. Olive brown. "*Mo shih tou* or the *Mo shih* bean. This bean is mostly used for cattle feed. They also sometimes extract the oil and use it for hair tonic."

26645. Green, very similar to No. 20854. "*Ch'ing tou* or green bean. This bean is used to make bean curd, an article of food much prized by the Chinese; the sprout of this bean is also much liked."

26646. Yellow, very similar to No. 17273. "*Yüan tou* or *Huang tou* (yellow bean). This bean forms the staple crop of Manchuria, and is eaten by the natives in many ways. Oil is also extracted from them and the residuum forms the bean cake of commerce which is used so extensively in Japan for fertilizer."

26647. CANAVALI ENSIFORME (L.) DC.**Jack bean.**

From Mayaguez, Porto Rico. Presented by Mr. D. W. May, director, Agricultural Experiment Station. Received February 3, 1910.

"An upright variety grown in 1909 at Biloxi, Miss., Baton Rouge, La., and Gainesville, Fla. It makes a bushy plant 3 to 5 feet high, very different from other varieties. Seeds white." (*C. V. Piper.*)

26648 and 26649. PRUNUS SIBIRICA L.

From Steglitz, near Berlin, Germany. Presented by Mr. F. Ledier, first curator, Royal Botanic Garden. Received February 3, 1910.

26648. (Cuttings.)

26649. (Seeds.)

"This has a future as a hardy ornamental shrub or small tree in our Northern States." (*F. N. Meyer.*)

26650 to 26653.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burt Davy, Government agrostologist and botanist, Transvaal Department of Agriculture. Received February 3, 1910.

Seeds of the following:

26650. *PENTZIA INCANA* (Thunb.) Kuntze.

"Karooobush."

See No. 26266 for previous introduction.

26651. *TRICHLORIS MENDOCINA* (Phil.) Kurtz.

Distribution.—Central Argentina, in the Provinces of Santa del Estero, Cordoba, and Mendoza.

26652. *ELIONURUS ARGENTIUS* Nees.

Distribution.—South Africa, from German Southwest Africa, the Kalahari Desert, and Transvaal, southward to the Cape.

26653. *CHAETOCHELOA NIGRIROSTRIS* (Nees) Skeels. (*Panicum nigrirostre* Nees, Fl. Afr. Austr. 55. 1841. *Setaria nigrirostris* Dur. and Schinz. Fl. Afr. 5: 774. 1895.)

The name *Setaria* Beauv. Agrost. 51. pl. 13. f. 3. 1812, is invalid as applied to a genus of grasses, since it was used earlier by Acharius, Lich. Suec. 4, 256. 1798, for a genus of lichens and in that sense replaces the genus *Alectoria* Acharius, 1810. The name *Chaetochloa* was therefore proposed by Scribner in 1897 for the genus of grasses previously known as *Setaria*.

Distribution.—South Africa from the vicinity of Klerksdorp in central Johannesburg southward through the eastern part of Orange River Colony and Natal to the Queenstown and Komgha districts in Cape Colony. Original locality, — "In altoribus ad Omsammubo, locis graminosis alt. 1,000' (Drege)."

26654 to 26656.

From Salisbury, Rhodesia, South Africa. Presented by Mr. R. McIlwaine, at the request of Mr. J. D. Riley, Box 11, Mercedes, Tex. Received February 2, 1910.

Seeds of the following. Native names as given by Mr. McIlwaine:

26654. *SCLEROCARYA CAFFRA* Sond.

"*Marula*." See No. 24762 for previous introduction.

26655. *FLACOURTIA RAMONTCHI* L'Herit.

"*Mgokolo*."

Distribution.—Common throughout India, both wild and cultivated; also in Madagascar and the East Indian islands.

26656. *SIDEROXYLON* sp.

"*Bumbulu*."

26657. EUPATORIUM sp. (?)

From Paraguay. Procured by Mr. Cornelius Ferris, jr., American consul, Asuncion, Paraguay. Received February 2, 1910.

"I think this is *Caahu*; the other name is *Yoyouvetima*. It grows to a height of about 10 feet, always on the border of the woods, in wood soil. The leaves are used for dyeing wool." (*Notes taken from the packet which contained seed.*)

26658 to 26665.

From Medan, Sumatra. Presented by Dr. L. R. de Bussy. Received February 3, 1910.

Seeds of the following:

26658. *NEPHELIUM* sp.

26659. *GARCINIA* sp.

26660. *VIGNA UNGUICULATA* (L.) Walp. Brown seeded.

Cowpea.

26661 and 26662. *VIGNA SESQUIPEDALIS* (L.) W. F. Wight.

26661. Reddish-brown seeds.

26662. Reddish-brown and white seeds.

26663 to 26665. *STIZOLOBIUM* sp.

26663. Mottled black and brown seeds.

26664. Black seeded.

26665. Gray seeded.

26666 to 26688.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, February 3 and 5, 1910.

Seeds and plants as follows:

26666. *MEDICAGO* sp.

From near Alupka, Crimea, Russia. "(No. 377 to 380, January 17, 1910.) Perennial alfalfas found growing in cliffs and on steep hill slopes in decomposed rock and in clayey soil. These plants will in all probability not bear heavy frosts. There are probably 2 or 3 species in this lot." (*Meyer.*)

26667. *MEDICAGO* sp.

From near Kirikinesh, Crimea, Russia. "(No. 381 and 382, January 17, 1910.) Perennial alfalfas growing in earth cliffs; have very long roots and are therefore drought resistant. Probably the same as the preceding number (S. P. I. No. 26666)." (*Meyer.*)

26666 to 26688—Continued.

26668. *ONONIS* sp.(?)

From near Kirikinesh, Crimea, Russia. "(No. 383, January 17, 1910.) An *Ononis* or perhaps a *Lotus* growing in earth cliffs together with *Medicagos*. Seems to be very drought resistant and may be of value as a perennial fodder plant in mild-wintered regions where dry, hot summers prevail." (*Meyer.*)

26669. *HEDYSARUM* sp.

From near Kirikinesh, Crimea, Russia. "(No. 384, January 17, 1910.) Found growing in the same localities as the preceding number (S. P. I. No. 26668), and the same remarks apply to it." (*Meyer.*)

26670. *FICUS CARICA* L.

Fig.

From near Sebastopol, Crimea, Russia. "(No. 385, January 14, 1910.) A form of the wild fig, with very deeply lobed leaves; growing in exposed rocks; freezing back in severe winters, as was shown by the root stumps. May be experimented with in the northern limits of fig-growing sections in the United States." (*Meyer.*)

26671. *SALIX VITELLINA* L.

From near Baidari, Crimea, Russia. "(No. 386, January 15, 1910.) Variety *aurea*. A handsome willow with golden-yellow twigs, growing into a tall shrub, or even a good-sized tree. Wood very brittle. Found wild in ravines and also cultivated in gardens. An ornamental garden and park tree for mild-wintered regions where dry and hot summers prevail." (*Meyer.*)

26672. *JASMINUM* sp.

From near Baidari, Crimea, Russia. "(No. 387, January 15, 1910.) The same as No. 375 (S. P. I. No. 26766), see this number for remarks." (*Meyer.*)

26673. *MEDICAGO ORBICULARIS* (L.) All.

From near Balaklava, Crimea, Russia. "(No. 1201a, January 14, 1910.) An annual alfalfa found growing upon hill slopes and on stony, rather sterile, plains. Germinates in early winter and ripens in early summer. Much liked by sheep that graze everywhere on the hills in the Crimea; also fed in the native hay to working horses and to bulls. May be of value as a winter forage plant in the mild-wintered regions of the United States and especially in California." (*Meyer.*)

Distribution.—The countries bordering on the Mediterranean, from Spain to Mesopotamia, and from Abyssinia to the Canary Islands.

26674 to 26676. *MEDICAGO* sp.

From near Balaklava, Crimea, Russia. "(No. 1202a to 1204a, January 14, 1910.) Same remarks apply to these as to the preceding (S. P. I. No. 26673)." (*Meyer.*)

26674. *MEDICAGO MINIMA* (L.) Grufb.

Distribution.—Western and southern Europe, from Sweden and Spain through middle and southern Russia to Greece, and through Asia to western India, and in northern Africa.

26675. *MEDICAGO RIGIDULA* (L.) Desr.

Distribution.—Same as No. 26673.

26676. *MEDICAGO RIGIDULA AGRESTIS* (Ten.) Burnat.

"A rare variety." (*Meyer.*)

Distribution.—Southern France, bordering on the Mediterranean, and in Italy, Sicily, Greece, and Syria.

26666 to 26688—Continued.**26677. MEDICAGO ORBICULARIS MICROCARPA Rouy & Fouc.**

From near Alupka, Crimea, Russia. "(No 1205a, January 17, 1910.) An annual alfalfa growing on hill slopes. The same remarks apply to this as to No. 1201a (S. P. I. No. 26673)." (Meyer.)

Distribution.—Same as No. 26673.

26678. TRIGONELLA sp.

From near Balaklava, Crimea, Russia. "(No. 1206a, January 14, 1910.) A leguminous plant, perhaps an annual. The pods were found on some stony fields near Balaklava and also in some wild native hay that was given to horses. May be of value as a fodder plant in similar regions as mentioned for No. 1201a (S. P. I. No. 26673)." (Meyer.)

26679. CORONILLA VARIA L.

From near Kirikinesh, Crimea, Russia. "(No. 1207a, January 16, 1910.) A perennial leguminous plant, making somewhat woody stems, on which the foliage persists in winter when located in sheltered nooks. Grows in dry cliffs and between boulders and rocks. May be of value as a fodder plant in similar regions as mentioned under No. 1201a (S. P. I. No. 26673)." (Meyer.)

Plants of this were received under Meyer No. 404 (S. P. I. No. 26817).

26680. PYRUS SALICIFOLIA Pall.

From Balaklava, Crimea, Russia. "(No. 1208a, January 14, 1910.) The same remarks apply to this as to No. 372 (S. P. I. No. 26763)." (Meyer.)

Distribution.—Desert slopes of hills and mountains in the Caucasus, southern Russia and northern Persia.

26681. MALUS BACCATA (L.) Moench.**Crab apple.**

From St. Petersburg, Russia. "(No. 1209a, December 10, 1910.) A few fruits of a form of *Malus baccata*, from Nertchinsk, Siberia, which are quite different from the ordinary form. Obtained from Prof. A. C. Doktorowitz-Grebinitzky, pomologist of the Forestry Institute at Liesnoi, near St. Petersburg, who is using this crab apple to create hardier apples by hybridizing it with *Malus prunifolia* and others." (Meyer.)

26682. MALUS BACCATA × PRUNIFOLIA.

From St. Petersburg, Russia. "(No. 1210a, December 10, 1910.) Obtained from the same source as the preceding number (S. P. I. No. 26681). This hybrid has better keeping qualities than the ordinary American crab apples." (Meyer.)

26683. RIBES PETRAEUM Wulf.

From Liesnoi Forestry Institute, near St. Petersburg, Russia. "(No. 1211a, December 17, 1909.) Seeds from the same bushes from which cuttings were sent under No. 368 (S. P. I. No. 26617). See this number for remarks." (Meyer.)

Distribution.—Alpine and sub-Alpine slopes of mountains in Switzerland, northern Italy, Austria, and east to the Altai and Baikal Mountains in Siberia.

26684. CERCIS SILIQUASTRUM L.

From near Kirikinesh, Crimea, Russia. "(No. 1212a, January 16, 1910.) The so-called Judas tree; a rebud of the Southern European and North African regions. Highly ornamental. Grows in sterile, stony localities, where it remains shrubby, but when planted in a good locality it grows up to be a tree 25 to 30 feet in height. Strongly recommended as an ornamental garden and park tree in mild-wintered regions where hot, dry summers prevail." (Meyer.)

26666 to 26688—Continued.

Distribution.—Southern Europe and western Asia, from southern France through the Tyrol and Greece to northern Persia.

26685. JASMINUM sp.

From near Baidari, Crimea, Russia. "(No. 1213a, January 15, 1910.) The same remarks apply to this as to Nos. 375 and 387 (S. P. I. Nos. 26766 and 26672)." (*Meyer.*)

26686. BERBERIS sp.

From hills near Sebastopol, Crimea, Russia. "(No. 1214a, January 11, 1910.) A barberry growing in rocky cliffs, in gullies, and on stony mountain sides. Has very large spines, but is of ornamental habit. Suitable as an ornamental garden shrub in mild-wintered regions, where the summers are hot and dry." (*Meyer.*)

26687. ROSA GALLICA × ———?

From Liesnoi Forestry Institute, near St. Petersburg, Russia. "(No. 1215a, December 17, 1909.) Seeds collected from the same bushes from which cuttings were sent under No. 369 (S. P. I. No. 26618). See this number for remarks." (*Meyer.*)

26688. JUNIPERUS EXCELSA Willd.

From mountains near Souchaja Retska, Crimea, Russia. "(No. 1220a, January 15, 1910.) A very beautiful juniper, with bluish-green foliage, large berries of dark violet color, and covered with a white bloom. A tall bush, but sometimes it grows into a tree 20 feet in height. Loves rocky and stony localities. A fine ornamental evergreen for mild-wintered regions, where hot and dry summers prevail. This juniper seems to occur only in the Crimea and the Caucasus." (*Meyer.*)

Distribution.—Southeastern Russia, from the Crimea through the Caucasus to the vicinity of the Caspian Sea.

26689 to 26757.

Material grown at the Subtropical Garden, Miami, Fla. Numbered for convenience in recording distribution February 7, 1910.

Plants (unless otherwise noted) of the following; descriptive notes by Mr. P. J. Wester:

26689 to 26730. PERSEA AMERICANA Miller.**Avocado.**

26689. *Trapp.* "Seed presented by Prof. P. H. Rolfs, Miami, Fla., January 4, 1905, from a very late fruit of this variety."

26690. "Seed presented by Mr. C. W. Butler, St. Petersburg, Fla., October, 1904. Fruited in 1909 for the first time. The fruit is of medium size, pyriform, surface smooth; greenish yellow, skin thin; quality very good; seed medium to large, filling cavity. Season, September.

26691. "Bud wood obtained from Judge White's place, Buena Vista, Fla., by Mrs. P. H. Rolfs, May 4, 1905. Fruit said to be very good, ripening late in December and early in January."

26692. "Bud wood received April 2, 1906, from Dr. F. S. Earle, Santiago de las Vegas, Cuba. Said to be a very late variety of good quality."

26689 to 26757—Continued.

26689 to 26730—Continued.

- 26693.** "Bud wood obtained by Mr. P. J. Wester from Capt. J. A. Thompson, Cocoanut Grove, Fla., June 25, 1906. The fruit is medium to large, pyriform; color of skin dark purple; seed medium large, firm in cavity; quality very good; season, October and November."
- 26694.** "Bud wood received July 18, 1906, from Mr. S. M. Pettit, Marco, Fla., who wrote that it was one of the best avocados in that locality. Fruited at the Subtropical Garden in 1909. Fruit large, roundish, oblong, oblique; surface smooth, green with numerous small whitish dots at apex; skin thick, separating readily from meat; color of meat yellowish, greenish next to skin, buttery and melting, but rather lacking in flavor; seed comparatively small, filling cavity. Season, September."
- 26695.** "Bud wood received July 18, 1906, from Mr. S. M. Pettit, Marco, Fla., as being one of the best varieties growing in that vicinity. Fruited at the Subtropical Garden in 1909. Fruit medium large, pyriform, surface medium rough, pale green with numerous small whitish lenticels; skin medium thick, separating readily from meat; color of meat mainly straw yellow, greenish near skin; rich and nutty and of excellent flavor; seed medium large, filling cavity. Season, October."
- 26696.** "Bud wood obtained by Mr. P. J. Wester from Mr. F. Harrison, Cocoanut Grove, Fla., March 27, 1907. Fruit medium large, long, pyriform; surface medium rough, color red; skin thick; quality of meat very good; seed comparatively small, filling cavity. Season, October."
- 26697.** "Bud wood obtained from Mr. F. Harrison, Cocoanut Grove, Fla., March 27, 1907. Fruit medium to large, obliquely pyriform; color of surface reddish maroon mottled with green; meat of good quality; seed rather large, filling cavity; very prolific. Season, October."
- 26698.** "Bud wood obtained by Mr. P. J. Wester from Mr. W. F. Powell, Fort Myers, Fla., May 22, 1907. Fruit large, pyriform; surface smooth, green; skin thin; quality very good; seed medium large, loose in cavity; prolific. Season, September. Has the reputation of being the best flavored avocado in Fort Myers."
- 26699.** "Bud wood obtained by Mr. P. J. Wester from Mr. C. W. Butler, St. Petersburg, Fla., May 17, 1907. Fruit pyriform to round; surface smooth, yellowish; skin thin; quality good; seed loose in cavity; very prolific. Season, September to October."
- 26700.** "Bud wood obtained by Mr. P. J. Wester from Mr. C. W. Butler, St. Petersburg, Fla., May 17, 1907. Of very good quality; prolific. Season, December."
- 26701.** "Bud wood presented by Rev. E. V. Blackman, Miami, Fla., June 19, 1907. Fruit roundish; weight about 700 grams; surface chocolate; skin thick and leathery; seed medium large, firm, or loose in cavity; quality good. Season, September."
- 26702.** "Bud wood obtained by Mr. P. J. Wester from Mr. E. B. Douglas, Miami, Fla., August 10, 1907. Fruit large, pyriform; surface smooth, purple; skin thin; color of meat rich yellow, flavor good; seed loose in cavity; prolific. Season, December."

26689 to 26757—Continued.

26689 to 26730—Continued.

- 26703.** "Bud wood received from Mrs. P. H. Rolfs, Buena Vista, Fla., August 10, 1907. Fruit roundish, oblique, small to medium; color rich maroon red, very attractive; skin thick and leathery; flavor rather inferior; seed loose in cavity; matures early, which is its strongest point. It is the earliest West Indian variety that has come to my attention."
- 26704.** "Bud wood obtained by Mr. P. J. Wester from Mrs. A. M. King, Miami, Fla., September 18, 1907. Fruit large, pyriform; surface smooth, red. Season, September."
- 26705.** "Bud wood obtained by Mr. P. J. Wester from Mrs. A. M. King, September 18, 1907. Fruit very large, oblong, irregular; surface rough, reddish; quality good. Season, September."
- 26706.** "Seeds received from Mr. G. B. Brackett, pomologist, United States Department of Agriculture, October 8, 1907. These were received by him from Mr. M. A. Carriker, Boruca, Costa Rica. The skin is said to be thick and woody and the flavor of the meat rich and delicate."
- 26707.** "Bud wood received from Mr. W. H. Fulford, Fulford, Fla., October 21, 1907. Fruit pyriform, bright red, of good quality, prolific. Said to be one of the best avocados in that locality."
- 26708.** "Bud wood received from Mr. W. H. Fulford, Fulford, Fla., October 21, 1907. Fruit very large, red, of good quality; prolific. Bud wood from one of the best trees in that locality."
- 26709.** "Bud wood received from Mr. W. H. Fulford, Fulford, Fla. Fruit very large; surface rough, green; of very good quality; prolific. One of the best avocados in the locality."
- 26710.** "Seeds received from Mr. William A. Taylor, United States Department of Agriculture, March 9, 1908. The fruit from which this seed was taken had been received by Mr. Taylor from Los Angeles, Cal."
- 26711.** "Fruit sent to Mr. William A. Taylor, United States Department of Agriculture, by Mr. J. H. Walker, Hollywood, Cal. Said by Mr. Taylor to be a fruit of exceptionally fine quality and to have a hard skin; seed sent by Mr. Taylor to the Subtropical Garden, March 9, 1908."
- 26712.** "Bud wood obtained by Mr. P. J. Wester from Capt. Thomas Hardee, Coconut Grove, Fla., August 11, 1908. Fruit medium to large, pyriform, purple; of exceedingly good quality; seed firm or loose in cavity; very prolific. Parent tree said to produce among the best flavored avocados in Coconut Grove."
- 26713.** "Bud wood obtained by Mr. P. J. Wester from Mr. W. H. H. Hobbs, Coconut Grove, Fla., September 5, 1908. Weight of fruit 1,020 grams, seed 130 grams, shape round oblique; ground color green turning to red and maroon, making it very attractive; skin thick and leathery; meat greenish 3 mm. from the skin, the rest yellowish, mottled with purple streaks; quality excellent; seed loose in cavity. Matures in the early part of September."

26689 to 26757—Continued.**26689 to 26730—Continued.**

26714. "Bud wood obtained by Mr. P. J. Wester from Mr. W. H. H. Hobbs, Cocoanut Grove, Fla., September 5, 1908. Fruit very similar in appearance to No. 26713, but somewhat larger; quality said to be very good and the tree a prolific bearer. Season, early part of September."

26715. "Bud wood obtained by Mr. P. J. Wester from Mr. W. H. H. Hobbs, Cocoanut Grove, Fla., September 5, 1908. Fruit medium to large, pyriform, quality good; seed loose in cavity; fairly prolific. Season, early part of September."

"The parent trees of Nos. 26713, 26714, and 26715 spring from the ground at the same point and Mr. Hobbs believes that they come from the same seed, though the fruits from the trees vary from each other to some extent."

26716. "Bud wood obtained by Mr. P. J. Wester from a tree on Judge White's homestead, Buena Vista, Fla., September 10, 1908. Fruit medium large, oblong or roundish, purple with numerous small green lenticels; skin smooth, medium thick; meat green 3 to 4 mm. next to the skin, rest yellowish mottled with purple streaks; flavor average to good; seed firm in cavity, medium large; very prolific. Ripens in early part of August and September."

26717. "Bud wood obtained by Mr. P. J. Wester from Mr. Courley, Buena Vista, Fla., September 28, 1908. Fruit reputed to be of very good quality and the tree prolific. Season, October to December."

26718. "Bud wood obtained by Mr. P. J. Wester from Prof. T. W. Mather, Miami, Fla., November 3, 1908. Fruit medium large to large, obliquely pyriform, maroon red with numerous small greenish-yellow lenticels; skin thick and leathery; meat pale yellow tinted with green and green predominating near the skin, the rest mottled with purple veins in distal end of fruit, making it rather attractive; meat rather soft; flavor good, but lacking in richness; seed firm in cavity."

26719. "Bud wood received from Mr. Walter Waldin, Miami, Fla. Fruit said to be of exceedingly good quality; medium early."

26720. "Bud wood received from Mr. Orange Pound, Cocoanut Grove, Fla., from a tree owned by Mr. Peacock, of the same place, November 28, 1908. Fruit large, pyriform, surface smooth, maroon red, greenish toward apex, skin medium thick, separating readily from meat; color of meat mainly yellowish, greenish next to skin, rich, nutty, and very delicately flavored. Seed smaller in proportion to meat than in any avocado that has come to my attention; loose in cavity. Season, November."

26721. "Bud wood obtained by Mr. P. J. Wester, through Mr. J. B. Beach, West Palm Beach, Fla., from a tree on the place of Dr. G. W. Potter, of the same place, September 1, 1909. The fruit is large, oblong or roundish, surface rather rough; green skin medium thick; meat mainly yellowish, green close to skin, of good quality; seed comparatively small, loose in cavity. Season, September."

26689 to 26757—Continued.**26689 to 26730—Continued.**

26722. "Bud wood obtained by Mr. P. J. Wester from Mr. J. U. Parker, West Palm Beach, Fla., September 1, 1909. Fruit of good quality and tree a good bearer."

26723. "Bud wood obtained by Mr. P. J. Wester from Mr. D. A. Allen, West Palm Beach, Fla., September 1, 1909. Fruit round, oblique, medium large; surface medium smooth, greenish yellow splashed with light red to poppy red, with streaks of dark red toward base; skin medium thick, separating readily from meat; meat yellowish, rich, nutty, and of a very good quality; seed rather large, filling cavity; prolific. Season, October to November."

26724. "Bud wood obtained by Mr. P. J. Wester from Mr. D. A. Allen, West Palm Beach, Fla., September 1, 1909. Fruit medium, roundish, pyriform, oblique; surface smooth, green; skin thick; meat yellowish of good quality; seed rather large, firm in cavity. The parent tree is prolific. Season, August and September."

26725. "Bud wood obtained by Mr. P. J. Wester from Mr. J. B. Douglass, Miami, Fla., September 14, 1909. Fruit medium to large, pyriform, oblong; surface smooth, red; lenticels numerous, whitish; skin medium thick, separating readily from meat; meat yellowish, veined with purple, pale green close to skin, rich and nutty; quality very good; seed medium large, firm in cavity. The tree is abundantly productive. Season, September."

26726. "Bud wood obtained by Mr. P. J. Wester from Mr. J. B. Douglass, Miami, Fla., September 14, 1909. Fruit medium large, pyriform; surface maroon red, lenticels numerous, greenish brown; skin thick, separating readily from meat; meat yellowish, greenish next to skin, moderately rich and nutty; quality good; seed medium large, nearly filling cavity, a constant and prolific bearer. Season, August."

26727. "Bud wood obtained by Mr. P. J. Wester, through Dr. John Gifford, Cocoanut Grove, Fla., from a tree on the place of Mrs. Florence P. Haden, of the same place. Fruit medium large, roundish, oblate, oblique; surface medium rough, dark red to coral red, tinged with green at apex, lenticels small, mostly at apex, whitish or greenish; skin medium thick, separating readily from meat; meat yellowish, green close to skin, exceedingly rich and nutty, of very good flavor; seed medium to large, nearly filling cavity. Season, October."

26728. "Bud wood obtained by Mr. P. J. Wester, from Mr. Orange Pound, Cocoanut Grove, Fla., September 16, 1909. Fruit medium large, obliquely long, pyriform; surface rough, dark maroon, lenticels numerous, small, reddish; skin very thick, separating readily from meat; meat yellowish with purple veins, green toward skin, rather lacking in flavor, with slight acidity near apex; seed medium to small, filling cavity; very prolific. Season, September. This variety colors up the most attractively of all varieties that have come to my notice."

26729. Seeds from fruits of No. 26695.

26730. Seeds from fruits of No. 26727.

26689 to 26757—Continued.

26731 to 26739. *ANONA CHERIMOLA* Miller.

Cherimoya.

26731. "Bud wood obtained by Mr. P. J. Wester, from Mr. Wm. Freeman, Little River, Fla., August 4, 1904, and budded at the Subtropical Garden on *Anona glabra*. Fruited by means of hand pollination, 1908, and again in 1909; the first plant of this species to fruit in Florida. The fruit is small, not exceeding 385 grams in weight, and the seeds are abundant; the flavor is good. The original seed was brought by Mr. Freeman from San Jose, Costa Rica, to Little River in 1895."

26732. "Bud wood obtained by Mr. P. J. Wester, from Mr. S. K. Brown, Lemon City, Fla. According to Mr. Brown, the seed was sent to him from Callao, Peru."

26733. Seedlings grown from S. P. I. No. 26731.

26734. "Seed presented by Dr. F. Franceschi, Santa Barbara, Cal., January 12, 1909."

26735. "Bud wood presented by Mr. E. Gottfried, Miami, Fla., April 16, 1909, from a tree grown on Key Largo, Fla., from seed sent to him from Peru."

26736. "Bud wood presented by Mr. E. Gottfried, Miami, Fla., April 16, 1909, from a tree grown on Key Largo, Fla., from seed sent to him from Peru."

26737. "Bud wood received from Dr. F. Franceschi, Santa Barbara, Cal., December 8, 1908. This variety has been introduced and grown under the name of *macrocarpa* in California, but it has no botanical standing as a separate species. It is evidently a very robust form of the *cherimola*."

26738. "Bud wood received from Dr. F. Franceschi, Santa Barbara, Cal., December 8, 1909. This variety was introduced and is grown in California under the name of *Anona suavissima*."

26739. "Bud wood received from Dr. F. Franceschi, Santa Barbara, Cal., December 8, 1908. This variety has been introduced and grown in California under the name of *Anona reniformis*."

26740 to 26746. *ANONA SQUAMOSA* L.

Sugar-apple.

26740. "Bud wood obtained by Mr. P. J. Wester, on Upper Metacumbe Key, Fla. From the earliest fruiting tree that has come to my attention."

26741. "Bud wood obtained by Mr. P. J. Wester, from Mr. J. B. Douglass, Miami, Fla. The fruit is of good quality and the tree a prolific bearer. Said to bear fruit very late."

26742. "Bud wood obtained by Mr. P. J. Wester, from Prof. P. H. Rolfs, Buena Vista, Fla. Fruit large, skin pinkish in color, quality very good, rather a shy bearer."

26743. "Bud wood obtained by Mr. P. J. Wester, from Prof. P. H. Rolfs, Buena Vista, Fla., September 10, 1908. Fruit medium large; skin pinkish, quality very good."

26744. "Bud wood obtained by Mr. P. J. Wester, from Prof. P. H. Rolfs, Buena Vista, Fla., September 19, 1908. Fruit small, of good quality, exceedingly prolific, a little later in season than the main crop."

26689 to 26757—Continued.**26740 to 26746—Continued.**

26745. "Bud wood obtained by Mr. P. J. Wester, from the Rev. L. S. Rader, Miami, Fla., September 18, 1908. The fruit from this tree is the largest of this species that has come to my attention; of good quality."

26746. "Seed received at the Subtropical Garden, Miami, Fla., September 22, 1908, from Mr. Henry F. Schultz, Ancon, Canal Zone, Panama."

26747 and 26748. *ANONA RETICULATA* L.

Custard-apple.

26747. "Bud wood obtained by Mr. P. J. Wester from Mr. Cephas Pinder, Upper Metacumbie Key, Fla., April, 1906."

26748. "Bud wood obtained by Mr. P. J. Wester from Mr. Cephas Pinder, Upper Metacumbie Key, Fla., April, 1906. The bud wood of this and the preceding number was taken from what Mr. Pinder considered his best custard-apple tree."

26749. *ANONA SENEGALENSIS* Pers.

"Seed received from Reasoner Bros., Oneco, Fla., September 18, 1908."

26750. *ANONA* sp. (?)

"Bud wood received from Mr. E. N. Reasoner, Oneco, Fla., April, 1908."

26751. *ANONA* sp. (?)

"Bud wood received from Mr. E. N. Reasoner, Oneco, Fla., April, 1908. The seed from which Mr. Reasoner's trees grew was sent to him many years ago by Mr. C. J. Harvey, Sanborn, Mexico, who wrote Mr. Reasoner that the fruit was very delicious."

26752. *ANONA* sp.

"Three plants received from Mr. O. F. Cook, February 12, 1909, who obtained the seed in Mexico."

26753. *ANONA* sp.

"*Soucoya*. Seed received from Dr. F. Franceschi, Santa Barbara, Cal., March 17, 1909."

26754. *ANONA SQUAMOSA* L.

"A tree that is very prolific, fruit of good quality."

26755. *PSIDIUM GUAJAVA* L.

Guava.

Seed received from Dr. H. J. Webber, December 12, 1906. A few of the plants raised from this seed have fruited and proved to be very superior to the common sorts."

26756. *PSIDIUM FRIEDRICHSTHALIANUM* (Berg) Niedenzu.

Plants received from Mr. E. N. Reasoner, Oneco, Fla., December 4, 1908.

"From Costa Rica. Extremely acid fruit, similar to *P. araca*; of value in cookery." (*Reasoner.*)

Distribution.—Reported only from Guatemala, South America.

26757. *PSIDIUM ARAÇA* Raddi.

Plants received from Mr. E. N. Reasoner, Oneco, Fla., December 4, 1908.

"Native of Brazil. Fruit extremely acid, of medium size, not very seedy." (*Reasoner.*)

Distribution.—Spontaneous and cultivated in the Caribbean islands and the northern part of South America, occurring in Guatemala, Peru, English and Dutch Guiana, and in the provinces of Solimoes, Ciara, Bahia, Minas Geraes, and Rio de Janeiro, Brazil.

26758 and 26759. MEDICAGO SATIVA L.**Alfalfa.**

From Mitchell, S. Dak. Presented by Prof. W. A. Wheeler, through Mr. Charles J. Brand. Received February 10, 1910.

Seeds of the following:

26758. "(S. D. No. 240; acclimatized *Turkestan* alfalfa.) This seed is the 1909 progeny of S. P. I. No. 991, and was grown at Mitchell, S. Dak. It is one of the hardiest of all the alfalfas that have been tested by the department, ranking second only to the *Grimm* alfalfa of Minnesota. In an experiment at Dickinson, N. Dak., including 68 kinds, it was exceeded in hardiness only by Minnesota and North Dakota *Grimm*." (*Brand*.)

26759. "(S. D. No. 167; so-called *Baltic* alfalfa.) This is one of the very promising alfalfas for cold climates, and at Dickinson, N. Dak., ranked fifth in winter hardiness of 68 kinds. For detailed information as to its origin, see S. P. I. No. 25806." (*Brand*.)

26760. ZIZANIA LATIFOLIA (Griseb.) Stapf.

From Tamsui, Formosa. Presented by Mr. Samuel C. Reat, American consul. Received February 5, 1910.

"This plant, which is closely related botanically to American wild rice, is, however, a perennial, which perpetuates itself by underground rootstocks. It grows wild and is also cultivated in various parts of China, Japan, and Formosa, and is the source of three separate food products, which are: The seeds, a fungus growth produced in the inflorescence, and the succulent vegetative shoots, which are produced from the rootstocks. The plant has a number of Chinese names, the most common of which is 'Ku.' It is also known in the vicinity of Canton as 'Chiao sun,' at Shanghai as 'Chiao pai,' and at Peking as 'Chiao kwa.' According to Bretschneider, the fungus growth in the inflorescence (*Ustilago esculenta* P. Henn) is known as 'Ku shou.' This fungus, which is said to be edible when young, is probably not unlike the smut occurring in the inflorescence of Indian corn, which latter is sometimes eaten by the Mexican Indians. The seed of this plant is apparently not generally used for food in China, as are the other parts, though mention of their use as human food is made in very early Chinese literature. The plant is said to be cultivated extensively in the vicinity of Canton, China." (*C. S. Scofield*.)

26761 to 26767.

From Sebastopol, Crimea, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, February 9, 1910.

Cuttings of the following:

26761. MORUS ALBA L.**White mulberry.**

From estate of Maximoff, near Sebastopol, Crimea, Russia. "(No. 360, January 11, 1910.) Variety *fastigiata*. A handsome fastigate form of the Russian mulberry, resistant to drought and heat. Suitable as an ornamental garden and park tree, especially in the semiarid, hot-summered regions of the United States." (*Meyer*.)

26762. SALIX BABYLONICA L.**Willow.**

From estate of Maximoff, near Sebastopol, Crimea, Russia. "(No. 371, January 11, 1910.) Variety *aurea*. A willow with golden-yellow branches, which are very pliable. It is apparently drought and heat resistant, and can be grown, as a producer of tying material, in the semiarid, hot-summered regions of the United States." (*Meyer*.)

26761 to 26767—Continued.**26763. PYRUS SALICIFOLIA** Pall. (?)

From hills near Sebastopol, Crimea, Russia. "(No. 372, January 11, 1910.) A wild pear growing on exposed, stony mountain sides and in cliffs and gullies. It grows up to 20 feet high, but is more generally seen as a tall bush, very variable as to shape and outlines; young branches and foliage very downy. Apparently very drought resistant. Will probably be of value as a stock for pears in the semiarid, hot-summered regions of the United States and especially for the Southwest." (*Meyer.*)

26764. PYRUS SALICIFOLIA Pall. (?)

From hills near Sebastopol, Crimea, Russia. "(No. 373, January 11, 1910.) A very compact-growing, round-headed variety of the preceding number (S. P. I. No. 26763). Of use as an ornamental garden tree of small dimensions in the semiarid, hot-summered regions of the United States." (*Meyer.*)

26765. CRATAEGUS ORIENTALIS Pall. (?)

From hills near Sebastopol, Crimea, Russia. "(No. 374, January 11, 1910.) A hawthorn growing on dry and stony places. Mostly seen as a shrub, but also growing into a small tree. Able to stand considerable drought, heat, and neglect. Of value as an ornamental garden tree and as a stock for pears in the semiarid, hot-summered regions of the United States." (*Meyer.*)

Distribution.—A tree or shrub, growing in the edges of the forests on the mountain slopes of Greece and Asia Minor.

26766. JASMINUM sp.

From hills near Sebastopol, Crimea, Russia. "(No. 375, January 11, 1910.) A jasmine, apparently closely allied to *J. nudiflorum*; has bright-green branches in winter, is of bushy growth, reaching a height of only a couple of feet. Found on stony mountain sides in somewhat shady places. May prove of value as a small ornamental garden shrub in the mild-wintered semiarid regions of the United States." (*Meyer.*)

26767. LIGUSTRUM sp.

From hills near Sebastopol, Crimea, Russia. "(No. 376, January 11, 1910.) A low, bushy, semi-evergreen privet, perhaps a variety of *L. vulgare*; grows on dry, rocky, mountain sides in somewhat shady places. Of use as a garden shrub in the semiarid regions of the United States." (*Meyer.*)

26768. LUCUMA MULTIFLORA DC.**"Jacana."**

From Mayaguez, Porto Rico. Presented by Mr. W. E. Hess, Agricultural Experiment Station. Received February 9, 1910.

"Fruit $1\frac{1}{2}$ to 2 inches long and wide. Some are pointed, others almost round; seeds one-third inclosed in a sweet, mealy pulp. The pulp is edible, texture and color strongly suggesting the yolk of a hard-boiled egg.

"On account of its large, lustrous foliage and symmetrical growth this tree should be valuable as an ornamental avenue tree for south Florida and California. It might also prove a vigorous stock for the egg fruit (*Lucuma nervosa* DC.); the fruit of this species is delicious, but it seems to be a very slow grower.

"I found *Lucuma* seed very slow in germinating. The fresh seeds require 3 to 5 months for germination, but after germinating they grow very rapidly." (*Hess.*)

Distribution.—Porto Rico and other West Indian islands; cultivated in southern Florida and California.

26769. HIBISCUS sp.

From Tientsin, China. Presented by Mr. F. Bade, through Mr. Hamilton Butler, American vice consul-general in charge. Received January 25, 1910.

"Probably a Japanese single variety." (*Bade.*)

26771 to 26782. DIOSPYROS KAKI L. f. Persimmon.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received February 10, 1910.

Cuttings of the following:

26771. <i>Daidaimaru.</i>	26777. <i>Kurokuma.</i>
26772. <i>Emon.</i>	26778. <i>Minozuru.</i>
26773. <i>Fuyugaki.</i>	26779. <i>O-gosho.</i>
26774. <i>Gosho-gaki.</i>	26780. <i>Tanenashi</i> (seedless).
26775. <i>Hachiya.</i>	26781. <i>Tauba-gaki.</i>
26776. <i>Hiayakume.</i>	26782. <i>Tsuru-no-ko.</i>

26783. BRASSICA PEKINENSIS (Lour.) Skeels. Pe tsai cabbage.

Presented by Mr. Maurice de Vilmorin, Paris, France, through Mr. Walter T. Swingle. Received January 25, 1910.

"Seeds of Chinese Pe tsai which I got from Abbé Martin, Gan pin Koëy, who says: 'I tried your improved Pe tsai but prefer the strain of this Province. Instead of extending many leaves this one makes a very white and tender head. It may be sown at the same time, but plant it much closer, as they do for salads. It is peculiarly good after the first hoarfrost.' " (*Vilmorin.*)

26784. CHLOROPHORA TINCTORIA (L.) Gaud.

From Paraguay. Procured by Mr. Cornelius Ferris, jr., American consul, Asuncion, Paraguay, from Mr. Conrado Kraus, horticulturist. Received February 17, 1910.

Tata-yuba. A tree with gray bark, and sometimes armed with thorns. The wood is yellow and furnishes a dye.

Distribution.—From the State of Vera Cruz, in southern Mexico, south through Central and South America to Paraguay; also in the West Indies.

26785. RHUS CORIARIA L. Sicilian sumac.

From Portici, Italy. Presented by Prof. L. Savastano, R. Scuola di Agricoltura. Received February 11, 1910.

"Seed of the well-known Sicilian sumac, a native of central Europe, occurring in Sicily, Spain, Portugal, Greece, and Cyprus. It has also been introduced into Algeria and some parts of Australia. The cultivation of this shrub and the marketing of the dried leaves, which are used for mordanting fabrics and tanning certain types of leather, forms an important industry in Sicily and Tuscany. In its native habitat this species succeeds well on dry and rather barren soil. It may be propagated either from seeds or cuttings, and its cultivation presents no special difficulties. Introduced for testing its possibilities as a cultivated crop." (*W. W. Stockberger.*)

26786. ALYSICARPUS VAGINALIS (L.) DC.

From the Island of Guam. Presented by Mr. J. B. Thompson, special agent in charge, Agricultural Experiment Station. Received February 8, 1910.

"This is an annual, upright legume, isolated plants growing to a height of 6 feet; when growing thickly, however, it attains a height of only 3 or 4 feet. Its economic possibilities were first recognized by Mr. J. B. Thompson, who found it growing extensively in certain parts of the Philippines. The plant is an annual, but under favorable circumstances grows again from the base, so that two or even three cuttings can be made. It should be extensively experimented with, especially in the Southern States where alfalfa can not be grown." (*C. V. Piper.*)

Distribution.—Throughout the tropics of the Old World, and naturalized in Jamaica, Antigua, and Trinidad.

26787. STIZOLOBIUM sp.

From Medan, Sumatra. Presented by Dr. L. R. de Bussy. Received February 3, 1910.

Seed gray mottled with brown.

NOTE.—This seed was picked out of the lot to which S. P. I. No. 26665 was assigned, by Prof. Piper.

26788 and 26789. CICER ARIETINUM L.**Chick-pea.**

From New York, N. Y. Purchased from Mr. J. Schindel. Received February 8, 1910.

Seeds of the following:

26788. *Spanish.*

26789. *California.*

26790. BRASSICA CAMPESTRIS L.**Swedish turnip.**

From New York, N. Y. Purchased from Messrs. J. M. Thorburn & Co. Received February 11, 1910.

Yellow Finland. To be grown at the Agricultural Experiment Station, Sitka, Alaska, in a comparative test with the *Petrowski* turnip, S. P. I. No. 19554, which has proved so well adapted to conditions there.

26791 and 26792. ROSA LAEVIGATA Michx.

From Redlands, Cal. Presented by Mr. Sydney Hockridge. Received at the Plant Introduction Garden, Chico, Cal., January, 1910.

Plants of the following:

26791. *Cherokee.*

26792. Variety *anemone*. The European pink hybrid, a rare and beautiful variety.

26793. PRUNUS PSEUDO-CERASUS Lindl.

From Yokohama, Japan. Purchased from the Yokohama Nursery Company. Received February 11, 1910.

See No. 25087 for description.

26794 to 26797. PUNICA GRANATUM L.**Pomegranate.**

From Hwai Yuan, China. Presented by Dr. Samuel Cochran, American Presbyterian Mission. Received February 9, 1910.

Cuttings of the following; notes by Dr. Samuel Cochran:

26794. "*Manao shihliu*, Carnelian pomegranate. The fruit is long instead of round, and the end attached to the twig is pointed. Kernels are large and the flavor good."

26795. "*Yushih tzu-tzu shihliu*, Jade seed pomegranate. White kernels, 'like rock candy,' my friend says. The flavor is good and does not cloy. The most valued variety we have."

26796. "*Peh-hwa shihliu*, white-flowered pomegranate. So called from the color of the blossom. The leaves are not red when first opened as are other varieties; the fruit is not ruddy like others and the kernels are white; the fruit is large, but rots easily and drops from the tree, so the yield is small. It is of good flavor."

26794 to 26797—Continued.

26797. "Cuttings from different trees of good unnamed sorts. I do not know if they really would constitute separate varieties. My friend, Mr. Sung Shao Ru, says they are good kinds he selected carefully."

"It is said that the Hwai Yuan pomegranates are the best in China, and I think it is very likely true. I believe they are sent from here for the Emperor's use. These cuttings were gathered for me by a friend who is a great tree lover and skilled in arboriculture so far as it is known in this part of the world. I have not seen the trees nor eaten the fruit of the particular ones from which these cuttings were taken, but I rely on what he says." (*Cochran.*)

26798. CYTISUS BIFLORUS L'Herit.

From Sarepta, Russia. Collected by Mr. K. B. Christies, presented by Mr. W. von Arapow, agronomist of Samara, Russia, through Mr. C. S. Scofield. Received January 26, 1910.

"This plant has a prostrate woody stem 1 to 3 decimeters long, with slightly oval leaves less than an inch long. It has been used somewhat in Europe as an ornamental, but from its description it does not appear to be promising as a forage plant." (*P. L. Ricker.*)

Distribution.—Southern Russia, and in Siberia, especially on the slopes of the Ural and Altai Mountains.

26799. ALEURITES FORDII Hemsl.**China wood-oil tree.**

From Audubon Park, New Orleans, La. Procured by Mr. Peter Bisset. Received February 14, 1910.

Grown from S. P. I. No. 13104. See S. P. I. No. 25081 for description.

26800. ROBINIA PSEUD-ACACIA L.

From Kew, England. Presented by the Royal Botanic Garden. Received February 17, 1910.

Variety *fastigiata*. "This curious tree, now seldom seen, is represented in the collection of Leguminosæ at Kew by a specimen 50 feet or so high. In habit it is one of the most erect and columnar of this class of trees, narrower, indeed, in proportion to its height than the Lombardy Poplar." (*W. J. Bean, Gardeners' Chronicle, March 9, 1907.*)

NOTE.—Linnæus in the *Species Plantarum*, 1753, vol. 2, p. 722, published the above specific name as two words, "*Robinia Pseudo Acacia*." In the second edition of the *Species Plantarum*, 1763, vol. 2, p. 1043, the name was changed to "*Robinia Pseud-Acacia*," and the latter is here accepted as the correct form.

26801 to 26817.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, February 12, 1910.

Cuttings of the following:

26801. OLEA EUROPAEA L.**Olive.**

From Nikita, Crimea, Russia. "(No. 388, January 22, 1910.) Cuttings from a very large olive tree, several centuries old, growing in the Imperial Botanical Garden at Nikita, and bearing large fruits. This and following numbers (S. P. I. Nos. 26802 to 26811) are cuttings of olive trees that have withstood temperatures of about -2° F. unhurt when other olives were frozen to the

26801 to 26817—Continued.

ground. They can therefore be recommended for southern Texas and for the interior valleys of California, where heavy frosts are occasionally experienced." (Meyer.)

26802 to 26811. OLEA EUROPAEA L.**Olive.**

From Nikita, Crimea, Russia. "(Nos. 389 to 398, January 22, 1910.) These cuttings have been cut from trees between 60 and 70 years of age, otherwise the same remarks apply to them as to No. 388 (S. P. I. No. 26801). Each of these numbers is a different variety, but as yet they have not been named by the Russians." (Meyer.)

26812. POPULUS sp.**Poplar.**

From Orianda, Crimea, Russia. "(No. 399, January 25, 1910.) A variety of poplar with whitish trunk, growing remarkably pyramidal and tall. The young trees seem to shoot up until they are about 80 feet tall, and then when getting older they branch out somewhat and lose their spire-like shape. To be recommended for regions where hot and dry summers prevail, followed by fairly mild winters." (Meyer.)

26813 and 26814. MEDICAGO spp.**Alfalfa.**

From near Yalta, Crimea, Russia. "(Nos. 400 and 401, January 24, 1910.) An alfalfa growing in dry earth cliffs, having very long and strong roots. Perhaps a variety of the ordinary *M. sativa*. See also Nos. 377 to 382 (S. P. I. Nos. 26666 and 26667) for further remarks." (Meyer.)

26815. MEDICAGO sp.

From near Nikita, Crimea, Russia. "(No. 402, January 24, 1910.) Apparently like the preceding numbers (S. P. I. Nos. 26813 and 26814), but found in a different locality." (Meyer.)

26816. MELILOTUS TAURICA (Bieb.) Ser.

From near Nikita, Crimea, Russia. "(No. 403, January 24, 1910.) A melilotus found on hill slopes in decomposed rocks. May be of value as a fodder plant in regions with dry and hot summers and mild winters." (Meyer.)

26817. CORONILLA VARIA L.

From near Nikita, Crimea, Russia. "(No. 404, January 24, 1910.) Found covering a steep hill slope of decomposed rock. Seeds sent under No. 1207a (S. P. I. No. 26679). See this number for further particulars." (Meyer.)

26818 to 26820.

Grown at Pullman, Wash., by Mr. M. W. Evans, season of 1909. Received fall of 1909.

Seed of the following:

26818. ONOBRYCHIS VICIAEFOLIA Scop. 1772. (*Onobrychis sativa* Lam. 1778.)**Sainfoin.****26819. PISUM ARVENSE L.****Pea.**

Field variety. Original seed received from Botanical Gardens, Dublany, Austria. Grown under Agrost. No. 0500.

26820. FESTUCA RUBRA L.**Red fescue.**

"A variety grown on the campus of the Agricultural College, College Park, Md., in dense shade. It would not produce seed at College Park, so was sent to Pullman, where it seeded freely." (Evans.)

26821 to 26835.

Grown at the Plant Introduction Garden, Chico, Cal. Numbered for convenience in recording distribution February 21, 1910.

Plants of the following varieties of fruit budded on *Amygdalus davidiana* to test it for its commercial value and congeniality as a stock for these fruits:

26821 to 26834. Budded on S. P. I. No. 22009.

26821 to 26827. *AMYGDALUS PERSICA* L. **Peach.**

26821. *Salway.* **26825.** *Levey's.*

26822. *Phillips Cling.* **26826.** *Alexander.*

26823. *McKevitt's Cling.* **26827.** *Heath Cling.*

26824. *Tuscan.*

26828 to 26831. *PRUNUS DOMESTICA* L. **Prune.**

26828. *Fellenberg.* **26830.** *Sugar.*

26829. *French.* **26831.** *Pond Seedling.*

26832. *PRUNUS ARMENIACA* L. **Apricot.**
Moorpark.

26833. *PRUNUS TRIFLORA* (X ———). **Plum.**
Wickson.

26834 and 26835. *AMYGDALUS COMMUNIS* L. **Almond.**

26834. *I. X. L.*

26835. Budded on S. P. I. No. 21227.

Nonpareil.

26839 and 26840. *GLYCINE HISPIDA* (Moench) Maxim. **Soy bean.**

From Kalgarh, Midnapur, India. Presented by Mr. A. L. Keenan. Received February 17, 1910.

Seeds of the following:

26839. Large black seeded. **26840.** Small black seeded.

26841 and 26842.

From Hangchow, China. Presented by Mr. John L. Stuart, Southern Presbyterian Mission. Received February 11 and 12, 1910.

Seeds of the following:

26841. *CANNABIS SATIVA* L. **Hemp.**

26842. *BOEHMERIA NIVEA* (L.) Gaud. **Ramie.**

"The women use the bark of this for thread and strings and also make a coarse cloth from it." (*Stuart.*) Chinese name *Ch'u ma*, or *Tchou ma*.

26844. *VIGNA UNGUICULATA* (L.) Walp. **Cowpea.**

From Vinemont, Ala. Purchased from Mr. E. C. Townsend. Received February 19, 1910.

Townsend. "A smooth white-seeded pea with a medium brown eye. This pea bunches like the speckled or Whippoorwill pea and is good for the table or stock."
(*Townsend.*)

26850. *PHOENIX DACTYLIFERA* X *CANARIENSIS*. (?)

From Audubon Park, New Orleans, La. Procured by Mr. Peter Bisset. Received February 12, 1910.

For the introduction of a cross similar to this see S. P. I. No. 3120.

26851. CHLORIS GAYANA Kunth.**Rhodes-grass.**

From Sydney, New South Wales, Australia. Purchased from Messrs. Anderson & Son. Received February 19, 1910.

Distribution.—Africa, from Abyssinia south to the Transvaal region.

26853 and 26854. GARCINIA spp.

From Buitenzorg, Java. Presented by Mr. H. Wigman, jr., Department of Agriculture. Received February 18, 1910

Seeds of the following:

26853. GARCINIA COWA Roxb.

For distribution of this species see No. 24769.

26854. GARCINIA DIOICA Blume.

Distribution.—Mountain slopes in the Provinces of Buitenzorg, Tjanjor, and Bantam, on the island of Java.

26855 and 26856.

From Mayaguez, Porto Rico. Presented by Mr. W. E. Hess, Agricultural Experiment Station, through Mr. P. J. Wester. Received February 23, 1910.

26855. ANONA PALUSTRIS L.

"A small tree indigenous to tropical America, 24 to 30 feet high, the trunk reaching 10 or 12 inches in diameter, inhabiting swampy and marshy localities. The fruit is said to be inedible." (*Wester.*) (*Plants.*)

Distribution.—Native and cultivated from the State of Vera Cruz in southern Mexico southward to Brazil, in the West Indies, and in the Senegambia region of Upper Guinea, Africa.

26856. RHODOMYRTUS TOMENTOSA (Ait.) Wight.

See No. 25891 for description.

26857 and 26858.

From Shanghai, China. Presented by Rev. J. M. W. Farnham. Received January 31, 1910.

Seeds of the following:

26857. CHAETOCLOA ITALICA (L.) Scribn.**Siberian millet.****26858. GLYCINE HISPIDA (Moench) Maxim.****Soy bean.**

Yellow.

26862 to 26865.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, February 24, 1910.

Plants of the following:

26862. FAGUS sp.

From near Gagri, Caucasus, Russia. "(No. 406, February 2, 1910.) A tall tree in the forest, having a whitish trunk, like the native American beech. Seems to like somewhat shady, cool places. Of value as a shade and timber tree in the moist, mild-wintered sections of the United States." (*Meyer.*)

26863 and 26864. VIOLA sp.**Violet.**

From near Gagri, Caucasus, Russia. "(Nos. 411 and 412, February 1, 1910.) A violet, found growing on semishady, rather dry places a few hundred feet above sea level. Bears small blue flowers which are quite fragrant. Is apparently more drought and heat resistant than the ordinary violets, some specimens even possessing more or less of a taproot. This may be of value in breeding a more drought and heat resistant strain of this favorite flower." (*Meyer.*)

26862 to 26865—Continued.**26865. MEDICAGO sp.**

From Novorossysk, Caucasus, Russia. "(No. 415, January 29, 1910.) Alfalfas growing on stony and clayey hillsides near Novorossysk. The summer is very hot and dry in this region, but the winter is mild and generally very wet." (*Meyer.*)

26866 to 26884.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, February 5, 1910.

Seeds of the following:

26866. ROSA sp.

From near Sebastopol, Crimea, Russia. "(No. 1216a, January 11, 1910.) A wild rose found in gullies and at the bases of rocky hills. A very strong grower. May serve as a stock for fine varieties of roses in mild-wintered regions, where the summers are hot and dry." (*Meyer.*)

26867. ROSA sp.

From near Sebastopol, Crimea, Russia. "(No. 1217a, January 11, 1910.) A wild rose of medium strong growth, found on similar places as the preceding number (S. P. I. No. 26866) and perhaps of value as a stock." (*Meyer.*)

26868. ROSA sp.

From near Baidari, Crimea, Russia. "(No. 1218a, January 15, 1910.) A wild rose growing in abundance in thickets and semishady places, has few spines. May be of use in hybridizing work and as a stock like the preceding numbers (S. P. I. Nos. 26866 and 26867)." (*Meyer.*)

26869. ROSA sp.

From Balaklava, Crimea, Russia. "(No. 1219a, January 14, 1910.) A wild rose of very bushy habit, occurring on rather sterile and stony fields. May be of value as an ornamental shrub in regions where the winters are fairly mild and the summers hot and dry." (*Meyer.*)

26870. SORBUS sp.

Mountain ash.

From near Baidari, Crimea, Russia. "(No. 1221a, January 15, 1910.) Found on dry and exposed places, remaining rather shrubby. Apparently able to withstand more heat and drought than the ordinary mountain ashes, and therefore recommended for regions with mild winters and hot and dry summers." (*Meyer.*)

26871. CRATAEGUS sp.

From near Sebastopol, Crimea, Russia. "(No. 1222a, January 11, 1910.) A tall shrub, growing sometimes into a tree. Found on rather stony and sterile places. Of value as an ornamental plant and as a stock for pears in mild-wintered regions, where hot and dry summers prevail." (*Meyer.*)

26872. CRATAEGUS sp.

From Balaklava, Crimea, Russia. "(No. 1223a, January 16, 1910.) A shrubby hawthorn bearing a few black, juicy berries. Found growing in a thicket. Of value as an ornamental shrub in regions like the preceding (S. P. I. No. 26871)." (*Meyer.*)

26873. CRATAEGUS sp.

From near Kirikinesh, Crimea, Siberia. "(No. 1224a, January 16, 1910.) A tall, shrubby hawthorn, found growing in fields. Of value like the preceding number (S. P. I. No. 26872)." (*Meyer.*)

26866 to 26884—Continued.

26874. COTONEASTER PYRACANTHA (L.) Spach.

From near Baidari, Crimea, Russia. "(No. 1225a, January 15, 1910.) This very ornamental evergreen hawthorn grows in its native habitat in rather sterile and exposed places, and where it is browsed upon by sheep and goats assumes very low, rounded shapes. Can probably be employed as a low evergreen for hedges and borders in fairly mild-wintered regions, with hot and dry summers." (*Meyer.*)

Distribution.—Southern Europe and western Asia, extending from Spain to Macedonia and eastward through Asia Minor to Syria. Naturalized in the United States from Pennsylvania to Tennessee and south to Alabama.

26875. CRATAEGUS sp.

From near Sebastopol, Crimea, Russia. "(No. 1226a, January 11, 1910.) A small tree, found at the foot of an embankment. Apparently quite rare. Of value as an ornamental, tall shrub or small tree in regions with dry and hot summers and fairly mild winters." (*Meyer.*)

26876. CRATAEGUS sp.

From near Baidari, Crimea, Russia. "(No. 1227a, January 14, 1910.) A low shrub, found growing in dry and stony places. Of value like the preceding number (S. P. I. No. 26875)." (*Meyer.*)

26877. LIGUSTRUM VULGARE L.**Privet.**

From near Baidari, Crimea, Russia. "(No. 1228a, January 15, 1910.) Collected from some shrubs, found growing on very dry and exposed places. This privet seems to be able to stand more drought and heat than is generally supposed. Of value as an ornamental shrub in regions with dry and hot summers and fairly mild winters." (*Meyer.*)

Distribution.—Europe, western Asia, and northern Africa; cultivated in the United States as a hedge plant, and naturalized locally from Maine to Ontario and south to North Carolina.

26878. CARPINUS BETULUS L.**European hornbeam.**

From near Sebastopol, Crimea, Russia. "(No. 1229a, January 11, 1910.) This well-known shrub, growing into a medium-sized tree, occasionally, is found in abundance on the hills and mountains of the Crimea, where it withstands heat and drought on even very sterile mountain sides remarkably well. Of value as an ornamental and as a hedge plant in similar regions as the preceding number (S. P. I. No. 26877)." (*Meyer.*)

Distribution.—Europe and western Asia; from southern England and Sweden to the Mediterranean, and east through southern Russia to Persia.

26879. PALIURUS SPINA-CHRISTI Mill.**Christ's-thorn.**

From near Sebastopol, Crimea, Russia. "(No. 1230a, January 9, 1910.) A Zizyphus-like shrub, with many hooked spines, growing in abundance here and there on dry stony places. A bad weed apparently. Of value as a botanical specimen in arboreta and botanical gardens." (*Meyer.*)

Distribution.—Southern Europe and Asia; from Switzerland through Hungary and Greece to Persia; also reported from the province of Shensi, northern China.

26880. VIBURNUM LANTANA L.**Wayfaring tree.**

From Baidari, Crimea, Russia. "(No. 1231a, January 15, 1910.) An ornamental Viburnum found in a thicket; this was the only specimen. Of value as an ornamental shrub in regions with hot and dry summers and fairly mild winters." (*Meyer.*)

26866 to 26884—Continued.

Distribution.—Southern Europe, western Asia, and northern Africa; cultivated in the United States as an ornamental shrub, and occasionally escaped along roadsides.

26881. HERACLEUM sp.

From near Kirikinesh, Crimea, Russia. "(No. 1232a, January 16, 1910.) A *Heracleum* with very large umbels. Found on a stony mountain side. Of value as an ornamental plant in parks and large gardens in mild-wintered regions where hot and dry summers prevail." (*Meyer.*)

26882. RUSCUS ACULEATUS L.**Butcher's-broom.**

From near Kirikinesh, Crimea, Russia. "(No. 1233a, January 16, 1910.) The well-known butcher's broom, growing wild in the Crimea in open woods and in thickets on the hillsides. Used locally for brooms to clean roads and courtyards. The plant is quite ornamental, being evergreen, only a foot or so in height, and bearing large scarlet berries. Of value as a ground cover underneath trees in gardens and parks in regions with hot and dry summers and fairly mild winters." (*Meyer.*)

Distribution.—From central and southern Europe east to Asia Minor, and also in northern Africa.

26883. ASPARAGUS sp.

From near Kirikinesh, Crimea, Russia. "(No. 1234a, January 16, 1910.) A climbing asparagus found once in awhile in an open thicket. Seems to be ornamental. Of value in regions like the preceding numbers." (*Meyer.*)

26884. JUNIPERUS OXYCEDRUS L.**Juniper.**

From near Sebastopol, Crimea, Russia. "(No. 1235a, January 11, 1910.) An ornamental juniper with light-green foliage, which is covered with a whitish bloom; it bears light-brown berries. Grows on very dry and sterile hill and mountain sides. Mostly seen as a spreading shrub, though occasionally reaching the size and appearance of a small tree. Of value as an ornamental evergreen in regions where hot and dry summers and fairly mild winters are experienced." (*Meyer.*)

Distribution.—Mountain slopes in the countries bordering on the Mediterranean from Spain to Persia and in northern Africa.

26885. CYCLAMEN PERSICUM Miller.

From near Gagri, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, February 24, 1910.

"(No. 419, January 31, 1910.) Tubers of the beautiful wild *Cyclamen*, that is flowering profusely at this time of the year, in the Caucasus. It is quite variable even in the wild state. Deserves to be naturalized in the mild-wintered regions of the United States, and will do especially well in northern and central California." (*Meyer.*)

Distribution.—In shady woods throughout Macedonia and Greece, and east to Lebanon and Palestine.

26886. PRUNUS SIMONII Carr.

From Dongsí, China. Received through Mr. Frank N. Meyer, agricultural explorer, at the Plant Introduction Garden, Chico, Cal. Numbered February 25, 1910.

"(No. 735a, June 22, 1907.) Seeds of an apricot-plum. A rare fruit that looks like an apricot, but is sour like a plum. Very fragrant, with downy, dull-yellow skin; rather small-sized. Perhaps a natural hybrid between the apricot and the plum." (*Meyer.*)

26887 to 26890. ZEA MAYS L.**Corn.**

From near Tegucigalpa, Honduras. Presented by Mr. Samuel McClintock, American consul. Received February 4, 1910.

Seeds of the following; notes by Mr. McClintock:

26887. Yellow mountain corn, from the Santa Lucia region.

26888 to 26890. Corn grown on the plains, from the farm of Señor Constantino Fiallos:

26888. Bluish black.

26890. Reddish yellow.

26889. Red.

26891 to 26894.

From near Gagri, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, February 24, 1910.

Plants of the following:

26891. ULMUS sp.

Elm.

"(No. 407, February 2, 1910.) An elm found on stony mountain sides. Of value like No. 406 (S. P. I. No. 26862)." (*Meyer.*)

26892. TILIA sp.

Linden.

"(No. 408, February 2, 1910.) A linden growing to very large dimensions. Found in ravines in the more elevated mountain regions. Of value as an ornamental tree in the mild-wintered regions of the United States." (*Meyer.*)

26893. FRAXINUS sp.

Ash.

"(No. 409, February 2, 1910.) A very tall species of ash, found mainly on moist mountain slopes in the more elevated regions. Of value as a timber tree in the mild-wintered regions of the United States." (*Meyer.*)

26894. (Undetermined.)

"(No. 410, February 2, 1910.) A low-growing shrub, found on cliffs in shady places; perhaps of ornamental value. In appearance between a *Lonicera* and a *Hypericum*." (*Meyer.*)

26895. VITIS VINIFERA L.**Grape.**

From Aghin, fourteen hours distant from Mamuretul-Aziz (Harput), Turkey.

Procured by Mr. Wm. W. Masterson, American consul, from Dr. Barnum, missionary. Received February 5 and 7, 1910.

"A kind of yellow grape of good size, which has been developed to such an extent that it is easily kept until the following May and even into June. I understand from our missionaries, who frequently visit the place, that the grapes are most excellent in flavor, and are noted throughout this country for their keeping qualities." (*Masterson.*)

26896. BROMELIA sp.

From Panama. Presented by Mr. Henry F. Schultz, Ancon, Canal Zone. Received February 23, 1910.

"A small plant, which may have some value as a fiber producer. It appears to be a species of *Bromelia*, and in fact resembles *B. pinguin* rather closely, except that it grows tall and upright, while *B. pinguin*, as I have seen it in the jungle in different parts of the Zone and Panama, develops a trailing habit. When grown in the open, as in Chiriqui, where it is used for fencing pastures, the leaves, of course, stand up stiffly, but seldom grow higher than 3 to 4 feet, rarely 5 feet; in the woods individual

26896—Continued.

leaves frequently trail and wind through the underbrush 10 to 12 feet in length. The species sent is armed with sharp and recurved spines and the leaves stood up straight 11 to 14 feet high (measured). The mother plants grow at Mariato, Province of Veraguas, R. P., on the property of the Boston-Panama Company, on rubber land (semiwild trees)." (*Schultz.*)

26897. DIOSPYROS SENEGALENSIS Perrott.

From Hartley and Melsetter districts, Rhodesia, South Africa. Presented by Mr. H. Godfrey Mundy, agriculturist and botanist, Department of Agriculture, Salisbury, Rhodesia. Received February 24, 1910.

"Native names: *M'shuma*, *M'chenji*, *Cheehati* or *M'soko*. This tree is said to be of considerable size and the timber to be useful for building purposes. The fruit is described as resembling that of '*Mahobohobo*' (*Uapaca kirikiana* Mill.), though somewhat smaller and with a thinner skin. Three to five seeds in each fruit. Habitat, warm and sheltered river banks, and not found in dry, waterless localities." (*Mundy.*)

See No. 25634 for distribution of this species.

26898. CICER ARIETINUM L.**Chick-pea.**

From Brooklyn, N. Y. Purchased from Messrs. Labato & Lombroso. Received February 25, 1910.

Mexican.

26899. AVENA SATIVA L.**Oat.**

From Pretoria, Transvaal, South Africa. Presented by Mr. I. B. P. Evans, Transvaal Department of Agriculture. Received February 23, 1910.

Algerian. "With us, oats suffer very considerably from rust, and this variety is practically the only one that shows immunity to the pest." (*Evans.*)

To be used in breeding work for rust resistance.

26901 to 26907.

From Tientai, via Ningpo, China. Presented by Rev. A. O. Loosely, through Mr. B. Youngblood, Scientific Assistant, Farm Management Investigations, Oklahoma, Okla. Received February 28, 1910.

Seeds of the following; descriptive notes by Rev. A. O. Loosely:

26901. ERIOBOTRYA JAPONICA (Thunb.) Lindl.**Loquat.**

"*Bibo* (bee-bō). A delicious fruit growing in clusters, each fruit being smaller than a small-sized egg; it is splendid for eating raw, stewed, or made into jam or jelly. This tree produces abundantly, but the kernel is large in proportion to the size of the fruit. It may be possible to make the fruit larger by cultivation."

26902 and 26903. DIOSPYROS KAKI L. f.**Persimmon.**

26902. Seeds long and narrow.

26903. Seeds short and broad.

"I presume you have better persimmons in California, but I never saw them in the Middle West; these ought to grow in Oklahoma. The fruit of one is the size and shape of a large egg; the other is larger, round, and flat; they are a delicious fruit for eating raw or dried. They have a long season of about two months, are prolific, and a sure crop."

26901 to 26907—Continued.**26904. ACTINIDIA sp.**

"*Deng li* (deng-lee), or vine pear, so called because resembling somewhat in appearance a Chinese pear, grows among the hills. The fruit is full of small seeds and slightly resembles a fig in taste. It is good for eating raw, stewed, or made into jam."

26905. MYRICA NAGI Thunb.

"*Yiangme* (yangmā), or tree strawberry. A round, bright-red, sweet, juicy fruit, growing on trees; construction similar to Osage orange or hedge apple. It is splendid for eating raw or stewed; the canned fruit must be kept in the dark, or it turns to vinegar. There is little to this fruit except juice, but it should become a favorite at once; aside from eating raw, its best use would probably be for making a drink by pressing out pulp and seeds. It will be a better shipper than the strawberry."

26906. RAPHANUS SATIVUS L.**Radish.**

"Large white radish. We use these as a cooked vegetable on the table and also raw; they are best cooked with meat."

26907. TRACHYCARPUS EXCELSUS (Thunb.) Wendl.

"A beautiful palm, hardy even if the ground freezes slightly."

Distribution.—Cultivated, and probably indigenous, in the Provinces of Kiangsu, Chekiang, and Szechwan, of the Chinese Empire, in the Korean Archipelago, and in Japan and the island of Formosa."

26908 to 26910.

From Limon, Costa Rica. Presented by Mr. H. F. Schultz, Ancon, Canal Zone, Panama. Received February 26, 1910.

Seeds of the following:

26908. PASSIFLORA LIGULARIS Juss.**Granadilla.**

"One of the best flavored of all the granadillas, sometimes called *Grandita de China* in southern Mexico, and often incorrectly identified as *Passiflora quadrangularis*. It has a parchment-like shell of a yellow or orange color, sometimes speckled with minute dots of a lighter color. Its pulp has a pleasant acidulous flavor and is used in many tropical countries for making a cooling drink, and also for frozen sherbets. For this purpose it is considered superior to the 'water-lemon' (*P. laurifolia*), which may be identified by its soft, flexible skin, and the 'passion fruit,' cultivated in Australia (*P. edulis*) which is characterized by its purple-dotted surface. The flowers are ornamental, and the plant grows rapidly, soon covering trellises and arbors in warm countries." *W. E. Safford.*)

Distribution.—From the southern part of Mexico southward to Colombia and Ecuador, and in Costa Rica.

26909. CHAYOTA EDULIS Jacq.**Chayote.****26910. ANONA sp.****26911. MEDICAGO SATIVA L.****Alfalfa.**

From Samara Province, Russia. Received from Messrs. Vollmer & Co., Riga, Russia, through Mr. J. M. Westgate, February 28, 1910.

"This seed is of interest owing to the fact that introductions of *Medicago falcata* have been secured from this same section." (*Westgate.*)

26912. (Undetermined.)

From Macao, China. Presented by Mr. A. J. Perkins. Received February 17, 1910.

"Seeds of *San-quat*, an orange-like fruit in exterior, but having a soapy pulp and many seeds." (*Perkins.*)

26913. ZEA MAYS L.**Corn.**

From the Hacienda Maguey, situated on the Rio Santiago, a branch of the Nazas, some 70 miles northwest of the city of Durango, Mexico, at an elevation of 6,100 feet. Procured by Mr. Charles L. Freeman, American consul, Durango, Mexico, from Mr. Marion C. Dyer, manager of the Hacienda. Received March 1, 1910.

"Mr. Dyer says that this corn will mature in less time and stand the lack of moisture better than any corn he has been able to procure." (*Freeman.*)

26914 to 26916. ZEA MAYS L.**Corn.**

From Guatemala. Presented by Mr. William Owen, vice and deputy consul general, Guatemala City. Received March 1, 1910.

Seeds of the following; notes by Mr. Owen:

26914. "Mixed lowland corn. Grown near Obispo, Department of Escuintla; altitude 700 feet; matures 90 days from date of planting."

26915. "Yellow highland corn. Grown at Eureka, Department of Guatemala; altitude 4,700 feet; matures 120 days from date of planting."

26916. "White highland corn. Grown at Zarzal, Department of Amatitlan; altitude 4,200 feet; matures 120 days from date of planting."

26917. TRIFOLIUM ALEXANDRINUM L.**Berseem.**

From Tripoli, Barbary, north Africa. Procured by Mr. A. E. Saunders, American vice and deputy consul, at the request of Mr. William Coffin, American consul. Received March 1, 1910.

"*Susfa.* The native kavass here says the seed should be sown sparingly in plats about 5 or 6 feet square, with a wall of soil about a foot high around it, and the seed sown from 1 to 2 inches deep, in ruts from 3 to 4 inches wide. It must be kept well watered. The *susfa* should grow to a height of 4 feet or more. Cut the plant the first year for fodder only, which can be done once a month, or oftener, taking care not to disturb the roots. For seed the second year's growth is better. As fodder it is very good for cows and horses, goats, etc., and need not be mixed with other food." (*Saunders.*)

Distribution.—The countries along the eastern part of the Mediterranean from Greece to Syria and Palestine, and in Egypt and Tripoli.

26918. CITRUS sp.**Sour orange.**

From Zimapan, Hidalgo, Mexico. Presented by Mr. Jorge J. White. Received March 2, 1910.

"Cuttings of what appears to me to be a very hardy and prolific orange. It has been under my observation for over a year and I have kept track of it for 1 year exactly. It is growing under adverse conditions, having only 2 feet of very poor soil, and receiving only the moisture from rains, which are scant here; under the soil is straight limestone, somewhat decomposed, for 2 or 3 feet, when it changes to the usual blue lime of this country. The tree is rather dwarf, being about 10 feet high; the head is 4 feet from the ground. It bore all the year and gave 1,378 oranges by actual count, and it has now 200 on the tree, of all sizes. The tree is very old, I should imagine about 50

26918—Continued.

years, as it is growing in the patio of the house in which I live, and was probably planted when the house was built. I believe this specimen is very hardy and very vigorous and perhaps will make a good stock for budding, where a hardy stock is needed." (*White.*)

26919. PUNICA PROTOPUNICA Balf. f.

From Edinburgh, Scotland. Presented by Dr. Isaac Bayley Balfour, director, Royal Botanic Garden. Received March 2, 1910.

See No. 26511 for description.

26920 to 26927.

From Kashmir, British India. Purchased from Mr. Rassul Galwan, Leh, Ladakh, Kashmir. Received January 27, 1910.

Seeds of the following. Unless otherwise noted the seed came from Leh:

26920. HORDEUM sp. Barley.

Several species are contained in this lot.

26921. HORDEUM sp. Barley.

26922. HORDEUM sp. Hull-less barley.

26923. HORDEUM VULGARE L. Barley.

26924. FAGOPYRUM TATARICUM (L.) Gaertn. Buckwheat.

26925. PANICUM MILLACEUM L. Proso or broom-corn millet.

The two preceding numbers are from Nubra, a village north of Leh, where it is warmer.

26926. BRASSICA CAMPESTRIS L.

26927. MEDICAGO FALCATA L.

"Mr. Galwan states in substance that this species is valuable, especially for horses. It is seeded in drills 6 inches apart and covered to a depth of 1 inch and immediately irrigated. At least four years are required for the plants to reach their full maturity. The latitude of Leh is 34° 30' north latitude, 37° east longitude." (*J. M. Westgate.*)

26928. DAHLIA COCCINEA Cav.

From Lawang, Java. Presented by Mr. M. Buysman, Hortus Tenggerensis. Received March 3, 1910.

Flowers single, scarlet, orange, and yellow, plants dwarf. May be valuable for hybridizing with the taller, more showy varieties to obtain dwarf forms.

Distribution.—Southern Mexico; at Santa Fe, near the city of Mexico, at the foot of Mount San Felipe in the Province of Oaxaca, and near Orizaba, in the State of Vera Cruz.

26929. KENNEDIA STIRLINGI Lindley.

From Perth, West Australia. Presented by Mr. W. Catton Grasby, agricultural editor, West Australian Mail, through Mr. Charles J. Brand. Received March 4, 1910.

"In experiments conducted by Mr. Grasby this species has given unusual promise as a forage crop. It is a bulky perennial and makes a rapid growth. One of the obstacles to its utilization is its comparative poor seed-producing capacity." (*Brand.*)

Distribution.—The Valley of the Swan River in the southwestern part of West Australia.

26930. FRANKLINIA ALATAMAHA Bartram (*Gordonia pubescens* L'Herit.).

From Philadelphia, Pa. Purchased from Miss Elizabeth De Hart, corner Fifty-fourth and Woodland Avenue. Received March 5, 1910.

"This ornamental is so rarely seen in our gardens that there is some danger of its becoming extinct. It is worthy of a wider distribution and might well be handled by nursery firms." (*Fairchild.*)

Distribution.—Cultivated in the eastern United States as far north as Philadelphia, Pa., and also in western and central Europe.

26931. FRANKLINIA ALATAMAHA Bartram.

From Cheltenham, Pa. Purchased from the Robert B. Haines Company. Received April 14, 1910.

See No. 26930 for previous introduction.

26932. CROTALARIA PUMILA Ortega.

From Miami, Fla. Received through Mr. Edward Simmonds, Subtropical Garden, February 28, 1910.

"This is a perennial species of *Crotalaria*, native of Miami, Fla. The plant has much the habit and appearance of alfalfa, but is inclined to lodge. The foliage is sweet and palatable, and the plant is worthy of testing in the extreme South for its forage possibilities." (*C. V. Piper.*)

Distribution.—Southern Florida, and in Mexico from Sonora to Vera Cruz, and in the West Indies and Venezuela.

26933 to 26937.

From Buitenzorg, Java. Presented by Mr. A. J. Perkins. Received March 5, 1910.

Seeds of the following; notes by Mr. Perkins:

26933. CITRUS DECUMANA (L.) Muir. **Pomelo.**

"*Jeroek delima.* This is a very good variety of pomelo with pink flesh and few seeds."

26934 and 26935. SAPOTA ZAPOTILLA (Jacq.) Coville. **Sapodilla.**

26934. "Seed from a particularly fine variety."

26935. "Seed from a specially large-fruited variety, as large as a goose egg."

Distribution.—Central America from Yucatan southward to the northern part of South America, and in the West Indies. Cultivated as far north as Lake Worth, Florida, and also in India.

26936. ARTOCARPUS COMMUNIS Forst. **Bread fruit.**

"Seed from a fruit called 'Nangka,' large; spiny coat; yellow pulp."

Distribution.—The islands of the Pacific, and cultivated in India and the West Indies.

26937. SAGUERUS PINNATUS Wurm.

"Malay name *Kahwoon* or *Ahren*. The young leaves of this palm are much used as wrappers for the Malay cigarettes. The cigarettes have much the appearance of lamplighters and are made from very strong tobacco. Sugar is obtained from the sap of this palm, as the name indicates, and it is used for thatch and for brooms."

Distribution.—Southeastern Asia and the Malayan islands; introduced into the West Indies.

26938. PTERYGOTA ALATA (Roxb.) R. Br.

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received March 4, 1910.

"The winged seeds of this tree are sometimes eaten by the natives of Burma; according to Roxburgh they are used in Sylhet as a cheap substitute for opium. The wood is light, coarsely fibrous, yellowish white, perishable." (*Watt, Dictionary of the Economic Products of India, vol. 6, pt. 3, p. 361.*)

Distribution.—The western peninsula of India and in the vicinities of Sylhet, Chittagong, Pegu, Martaban, and Tenasserim; also on the Andaman islands.

26939 to 26943. SOLANUM COMMERSONII Dun.

From Berlin, Germany. Presented by Mr. L. Wittmack, Royal School of Agriculture. Received March 4, 1910.

Tubers for use in potato-breeding investigations.

Distribution.—The vicinity of Montevideo, Uruguay.

26944. ZIZANIA LATIFOLIA (Griseb.) Stapf.

From Kew, England. Presented by the Royal Botanic Gardens, at the request of Mr. C. S. Scofield. Received March 3, 1910.

See No. 26760 for description.

26945. QUERCUS DENTATA Thunb.

From the Ming Tombs, near Nan Kou, China. Presented by Mr. F. Bade, through Mr. Hamilton Butler, vice consul-general in charge, Tientsin. Received January 25, 1910.

For previous introductions see Nos. 17842, 17879, and 18265.

Distribution.—Mountain slopes in the provinces of Chihli, Shingking, Shantung, Shensi, and Yunnan, China, in the vicinity of Port Hamilton, Korea, on Green Island, in the Korean Archipelago, and in the vicinities of Hakodate, Simoda, Yokohama, and Yokosuka, in Japan.

26946 to 26948. PHOENIX DACTYLIFERA L.

Date.

From Panj Chur, Baluchistan. Procured by Mr. John A. Ray, American consul, Maskat, Oman, Arabia. Received January 29 and March 5, 1910.

Seeds of the following; notes by Mr. Ray:

26946. "The best dates; packed in little cases of straw and called '*pish baud*' from pish (straw) and baud (tied); that is, tied in straw."

26947. "Dates packed in a skin. Said to be the kind sold in jars in India. They are called '*mazabti*,' which is said to mean 'cleaned' in Baluchi. On reaching India they are taken from the skins and placed in jars, and they are then known as '*burni*' dates, from burni (meaning jar in Hindustani)."

26948. These dates are better than the preceding numbers. They are packed in jars and are called in the Baluchi language '*hoomb*' (I do not know how they write it). In Arabic they are called '*burni*,' meaning jar."

26949. DIOSPYROS KAKI L. f.

Persimmon.

From Hwai Yuan, via Nanking, China, presented by Dr. Samuel Cochran, American Presbyterian Mission. Received February 26, 1910.

26950. ZEA MAYS L.

Corn.

From the hacienda of Mr. A. E. Graham, of Forlon, Tamaulipas, Mexico, post-office address Cruz Station, Tamaulipas, Mexico. Procured by Mr. Clarence A. Miller, American consul, Matamoros, Mexico. Received March 8, 1910.

White seeded.

26951 to 26958. ZEA MAYS L.**Corn.**

From Mexico. Procured by Mr. Samuel E. Magill, American consul, Guadalajara, Mexico. Received March 8, 1910.

Seeds of the following; notes by Mr. Magill:

26951. "*Tabloncillo*." Produced in the vicinity of Zazoalco, Sayula, and Zapotlan.

26952. "*Common*." Produced near Guadalajara.

26953. "*Common, broad*." Produced near Guadalajara.

26954. "*Broad*." Produced near Cocula and some other points.

26955. "*Liso*." Produced near Ameca.

26956. "*Chino or Pepitillo grueso*." Produced near La Barca.

26957. "*Jala*." Produced in the Valley of Jala, Territory of Tepic.

26958. "*Cabesoneña*." Produced near Tequila, and is said to be the superior of any grown in the United States.

26980. PHOENIX DACTYLIFERA L.**Date.**

From the region of El Hasa, Arabia. Procured by Mr. John A. Ray, American consul, Maskat, Oman, Arabia. Received March 25, 1910.

"These dates are called '*khullas*,' meaning pure, extra fine. They have quite a reputation for sweetness, but the original flavor is unfortunately obscured by the addition of cumin seed." (Ray.)

26981 and 26982. EUCALYPTUS spp.

From Melbourne, Australia. Presented by Mr. W. R. Guilfoyle, director, Botanic and Domain Gardens. Received March 9, 1910.

Seeds of the following; procured for the Forest Service of this Department, to be used in experimental plantings in the South:

26981. *EUCALYPTUS BOTRYOIDES* Smith.

26982. *EUCALYPTUS SIDEROXYLON* A. Cunn.

26983. SAGITTARIA sp. (?)

Procured by Mr. David Fairchild in a Chinese restaurant, Washington, D. C. Received March 9, 1910.

"The *See Koo* is grown extensively around Canton, China, on wet land, very much as the dasheens and taros are grown in other parts of the world. It is to be found for sale on the streets in baskets and special tubs which are carried around by the vegetable dealers. These specimens were given to me by the manager of the Port Arthur restaurant, who informed me that he paid 12 cents a pound for the tubers and that he cut them up and boiled them much as he would potatoes." (Fairchild.)

26985 to 26987.

From the Himalayas, India. Presented by J. Mollison, Inspector General of Agriculture in India, Nagpur, India. Received March 10, 1910.

Seeds of the following; notes by Mr. Mollison:

26985. *AMYGDALUS PERSICA* L.

Peach.

"Native name *Aru*. A nursery of peach plants is raised in the months of January and February. The land is first dug, properly cleaned, and manured. Seeds are then sown 3 inches deep in trenches and germination takes place in the following March. About a year after, i. e., in February next, the seedlings

26985 to 26987—Continued.

are transplanted to their permanent homes. They are planted in pits dug 2 feet deep, at a distance of 9 feet from each other, and manured with cow or sheep dung. Watering is given every third or fourth day, if necessary. Superior varieties of peaches, apricots, and plums are grafted on these trees."

26986. AMYGDALUS PERSICA L.**Peach.**

"*Nectarine*, another variety of wild peach, native name *Munda Aru*. Same remarks apply to this as to the preceding number (S. P. I. No. 26985)."

26987. PYRUS PASHIA Hamilton.

"Native name *Shegal*. The methods used in raising a nursery and transplanting the seedlings of *Shegal* plants is the same as that described for peaches (S. P. I. No. 26985). On this tree are grafted superior varieties of pears which are known in the Kulu as '*Nakh*.' No other fruit can be grafted on it."

Distribution.—Temperate slopes of the Himalayas, at an elevation of 2,500 to 8,000 feet, from Kashmir to Bhotan and in the Kashia Mountains, northern India.

26989. CHRYSANTHEMUM STIPULACEUM (Moench) W. F. Wight.

From Yokohama, Japan. Purchased from the Yokohama Nursery Company.

Received February 25, 1910.

"Best large mixed."

26990. CICER ARIETINUM L.**Chick-pea.**

From the vicinity of Safed, Palestine. Procured by Mr. Alex. Aaronsohn, Zichron-Jacob, near Haifa, Palestine. Received March 9, 1910.

"Safed is in upper Galilee, at an elevation of 2,000 feet above sea level. The chickpea is cultivated on very calcareous soil; it is sown the end of March and harvested the beginning of July; no rain falls during this time, so that the only moisture it receives is that which is stored in the soil.

"There are three varieties contained in this lot. One, which is considered a botanical variety, has rose-colored flowers and brownish seeds and when cooked turns black; this is a very inferior variety. The other two have white flowers, but one has very small seeds and a thick skin, and requires a long time in cooking; the other is large seeded and is considered better than either of the above-mentioned varieties; it is also much better when cooked." (*Aaron Aaronsohn*.)

26991 to 27000. ZEA MAYS L.**Corn.**

From Mexico. Procured by Mr. William W. Canada, American consul, Vera Cruz. Received March 8, 1910.

Seeds of the following:

26991. From San Cristobal Lave, Vera Cruz Co.

26992. From Hacienda de Tula, Tuxtla Co.

26993. From Cosamaloapan, Cosamaloapan Co.

26994. From Cordoba, Cordoba Co.

26995. From Huatusco, Huatusco Co.

26996. From Huiloapan, Orizaba Co.

26997. From Zongolica, Zongolica Co. (Appears to be mixed.)

26998. From Jalapa, Jalapa Co.

26999. From Papantla, Papantla Co.

27000. From Tlacotalpan, Vera Cruz Co.

27006. TERAMNUS sp.

From San Jose, Costa Rica. Presented by Mr. C. Wercklé, through Mr. H. Pittier.
Received March 14, 1910.

"A plant that maintains the fertility of the soil in the cool highlands. It is also a forage plant very much relished by cattle." (*Wercklé.*)

27007 to 27010. VITIS VINIFERA L.**Grape.**

From Guadalajara, Mexico. Presented by Sr. Louis Barbieri, Calle del Carro, No. 27, through Mr. Frederick Chisolm. Received August 22, 1908. Numbered for convenience in recording distribution March 14, 1910.

Cuttings of unnamed varieties.

27011. HYPHAENE GUINEENSIS Schum. (?)**Ivory nut.**

From Grand Bassa, Liberia. Presented by Mr. E. L. Parker, Commissioner of Agriculture, Monrovia, Liberia, at the request of Mr. F. A. Flower. Received March 12, 1910.

"This nut develops at the root of the plant. The natives use the leaves for thatching or covering the roofs of their houses." (*S. G. Harmon.*)

See No. 13136 for previous introduction.

Distribution.—Along the west coast of Africa from the mouth of the Kongo south to the valley of the Kuanza River.

27013. VIROLA SEBIFERA Aubl.**Bicuiba.**

From Bahia, Brazil. Presented by Mr. Omar E. Mueller, American vice consul. Received February 16, 1910.

"The oil from the seed of this tree is used for making candles, and the inner bark is used for medicinal purposes." (*Extract from Engler and Prantl, Natürlichen Pflanzenfamilien, vol. 3, pt. 2, p. 42.*)

Distribution.—Damp woods along streams and on the mountains in Guiana and the valley of the Amazon in Brazil.

27014 to 27016.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burt Davy, Government agrostologist and botanist, Transvaal Department of Agriculture. Received March 11 and 12, 1910.

Seeds of the following:

27014. PACOURIA CAPENSIS (Oliver) S. Moore. (*Landolphia capensis* Oliver.)

"This fruit is sometimes called the wild apricot, wild peach, or in Dutch, wilde perske; the Setsu name is 'Maraapa.' It is a low, scrambling shrub common on the kopjes and randjes north of Pretoria, producing an abundance of fragrant white flowers in spring, and numerous large reddish-yellow fruits in January and February. These fruits are edible, with a pleasantly acid flavor, and are said to make good brandy, jelly and vinegar." (*Transvaal Agricultural Journal, April, 1906, p. 617.*)

See 22530 for previous introduction.

27015. XIMENIA CAFFRA Sond.**Kafir plum.**

"This is a small tree, native of the dry bush veldt country at an altitude of about 3,500 feet in districts practically free from frost. The drupe is fairly large, 1 to 1½ inches long, fleshy and very acid, and is much appreciated by the Kafirs. It is said the fruit can be made into excellent jelly." (*Davy.*)

Distribution.—A shrub found in woods in the vicinities of Macallisberg and of Port Natal, in South Africa.

27014 to 27016—Continued.**27016. VANGUERIA INFAUSTA Burch.****Mispel.**

"The 'mispel,' miscalled 'wild medlar,' and known as moupoula or mobola by the natives, is common on kopjes and randjes in the Bosh veldt, and is also met with occasionally on kopjes on the Hoogeveld.

"The fruit of the mispel is sometimes described as the best native fruit of the Transvaal. It has an excellent flavor and is large enough to be worth eating, being over an inch in diameter. The flavor reminds one a little of that of the medlar." (*Transvaal Agricultural Journal*, October, 1904, p. 125.)

See No. 25171 for previous introduction.

27017 to 27019.

From Cape Colony, South Africa. Procured by Mr. Charles P. Lounsbury, Government entomologist. Received March 12, 1910.

Seeds of the following:

27017. BAROSMA CRENULATA (L.) Hook.**True buchu.**

See No. 25817 for previous introduction.

27018. EMPLÉURUM UNICAPSULARIS (L.) Skeels.**False buchu.**

(*Diosma unicusularis* L. Suppl., pl. 155. 1781. *Empleurum serrulatum* Soland. in Ait on, Hort. Kew., vol. 3, p. 340. 1789.)

This species was referred to the genus *Diosma* when originally described by Linnæus, but when Solander in 1789, recognizing its generic distinctness, established the genus *Empleurum* for it he changed the specific designation, as was frequently done in transferring a species from one genus to another. The original specific name has not previously been used in connection with the above generic name.

Distribution.—The extreme southern part of Cape Colony in Africa from mountain valleys in the Tulbagh district eastward to the Zwartberg.

27019. BAROSMA SERRATIFOLIA (Curt.) Willd.**Long-leaved buchu.**

Procured through Rev. R. Schmidt, of the Moravian Mission at Genadendal, Caledon.

Distribution.—Mountain slopes in the southern part of Cape Colony.

27020. PYRUS sp.**Pear.**

From St. Anthony Park, St. Paul, Minn. Presented by Prof. Samuel B. Green, Division of Horticulture and Forestry, University of Minnesota. Received March 14, 1910.

"Plants grown from seed received from Professor Parker, Manchuria." (*Green.*)

27025. PICEA OBOVATA SCHRENKIANA (Fisch. and Mey.) Carr.

From Orleans, France. Purchased from Messrs. Barbier & Co. Received March 16, 1910.

"This variety is closely related in appearance to *Picea excelsa*, but it differs from it in the bracts at the base of the cones, which are much longer, and in its leaves, which are farther apart, thicker, and longer, often 25 to 30 mm. The cones are cylindrical, 8 cm. long by 22 mm. in diameter. Here (Paris), the plants are bushy; the branches generally frail, spreading, deflected, and although it comes from the cold parts of Europe, is, nevertheless, delicate, grows badly, and often freezes, being injured by the spring frosts, which come after they have started to grow. This form particularly,

27025—Continued.

which comes out very early in the springtime, freezes almost every year." (*Extract from Carrière, Traité générale des Conifères, p. 338.*)

See No. 22909 for previous introduction.

Distribution.—The slopes of the Alatau Mountains in southern Siberia, and the Tien Shan Mountains in Dzungaria, in the western part of the Chinese Empire. (Plants.)

27026. MEDICAGO SATIVA L.**Alfalfa.**

From Gabes, Tunis. Procured by Mr. M. Victor Dumas, Controleur Civil, Sousse, Tunis, from El Habib ben Trab, Amin des vivres à Menzel, for Mr. J. M. Westgate, at the suggestion of Mr. T. H. Kearney. Received March 12, 1910.

Tripoli.

27027. OLEA EUROPAEA L.**Olive.**

From the foothills of the Amanus Mountains, Turkey. Presented by Mr. F. D. Shepard, Aintab, Turkey. Received March 11, 1910.

"These olives were collected on the landward side of the Amanus Mountains, where the climate is semiarid. The olive is more at home on the seaward side of these mountains, where the tree, or shrub (for in the wild state it is more like a shrub than a tree) is larger and the fruit nearly twice as large. It does not grow wild on the Kurd Dagħ (Kurdish Mountains), the parallel range farther inland, and still more arid, although the cultivated olive thrives there." (*Shepard.*)

27028 to 27031.

From Baumschulenweg, bei Berlin, Germany. Purchased from Mr. L. Späth. Received March 17, 1910.

Plants of the following; descriptions taken from Späth's catalogue for 1909-10:

27028 to 27030. SORBUS AUCUPARIA L.**Mountain ash.**

27028. "Variety *moravica* Zengerling. From northern Austria. The fruits are put up like red whortleberries and make a very refreshing preserve; they can also be used in the making of wine. The scarlet-red berries are larger than the Russian ones, but decidedly sharper in taste. The tree thrives on the poorest soil."

27029 and 27030. "According to information from a Russian business friend, these edible mountain ashes are much cultivated in southern Russia, partly eaten fresh, but more used in the preserve manufactory at Kief. The berries, the size of peas, are powdered with sugar, dried, and shipped in boxes. I tasted these fruits prepared in this way and found that they had a pleasantly acid taste, a little bitter, but not at all unpleasant. The fruits are used as dessert fruits, for the making of tarts, etc., and like the Moravian edible mountain ashes, make a very nice preserve. Found in two forms as follows:

27029. "Variety *rossica* L. Späth, 1898.

"Berries the size of the ordinary mountain ash, round, coral red. Taste acid sweet, slightly astringent, but without any bitter aftertaste."

27030. "Variety *rossica major* L. Späth, 1903.

"Berries somewhat larger than those of the preceding form (S. P. I. No. 27029), short, oval, scarlet red, without any bitter taste."

27028 to 27031—Continued.**27031.** × *PRUNUS DASYCARPA* Ehrh.**Plum-apricot.**

Considered to be a hybrid between *Prunus cerasifera myrobalana* and *P. armeniaca*.

"This tree has white blooms in the early spring, and the fruit ripens at the beginning of August. It is medium sized, blackish purple, with fine hairs; the flesh is blood red, turning to orange near the stone, juicy, sweet, and of apricot taste."

27032 and 27033. CITRUS spp.

From Tanabe, Wakayamaken, Japan. Presented by Mr. Sietaro Matsuba, at the request of Mr. A. J. Perkins. Received March 14, 1910.

27032. *CITRUS AURANTIUM* L.**Orange.***Natsu-mikan.* See No. 22670 for description.

(Cuttings.)

27033. *CITRUS* sp.*Uchi murasaki.*

(Seeds.)

27034. DIOSPYROS KAKI L. f.**Persimmon.**

From Gifu, Japan. Procured from the Gifu Agricultural Experimental Station, through the Yokohama Nursery Company, Yokohama, Japan, at the suggestion of Mr. A. J. Perkins. Received March 9, 1910.

Suyugaki.

(Plants.)

27035 to 27042. DIOSPYROS KAKI L. f.**Persimmon.**

Presented by Rev. H. Loomis, American Bible Society, Yokohama, Japan. Received February 21, 1910.

Cuttings of the following:

27035-27041. From Sendai, Japan, 237 miles from Yokohama, 217 miles north of Tokyo.

27035. *Tsurunoko.* (Ana.)**27039.** *Hegaki.* (Shibu.)**27036.** *Tanenashi.* (Shibu.)**27040.** *Toyama.* (Shibu.)**27037.** *Hachiya.* (Shibu.)**27041.** *Okame.* (Shibu.)**27038.** *Heyakume.* (Ana.)

"Nos. 27035 and 27038 are not astringent."

27042. From Korea. "This fruit is not astringent and is of excellent flavor. It grows in a climate that is like that of Philadelphia." (*Loomis.*)

27043. DIOSPYROS KAKI L. f.**Persimmon.**

From Tokyo, Japan. Procured by Rev. H. Loomis, American Bible Society, Yokohama, Japan, from the garden of Count Date. Received March 12, 1910.

"I think these persimmons are of rare value, being very sweet, not astringent, quite large, and almost seedless, probably a distinctly new variety." (*Loomis.*)

27044. DIOSCOREA ALATA L.**Yam.**

From Miami, Florida. Grown at the Subtropical Garden, sent in by Mr. P. J. Wester. Received March 15, 1910.

"One of the most promising of the yams." (*Wester.*)

27045 to 27048.

From Orleans, France. Presented by Mr. Leon Chenault, at the request of Mr. Philippe Vilmorin.
Received March 14, 1910.

Plants of the following:

27045. × *BERBERIS STENOPHYLLA* Lindl.

"Seedlings of this hybrid between *B. darwinii* and *B. empetrifolia*. The seedlings break up in all intermediate types and the whole plant serves as an excellent illustration that even if the immediate result of a hybridization does not give what is wanted, the seedlings of such a plant may." (*F. N. Meyer.*)

27046. *PINUS ARMANDI* Franch.

"A new rather dwarf pine from western China." (*F. N. Meyer.*)

Distribution.—On the Tsingling Mountains in the Province of Shensi, and in the Provinces of Szechwan and Yunnan, western China.

27047. *LONICERA PILEATA* Oliver.

"This is a good plant for rockeries and at the ends of beds of shrubbery; it is of caespitose habit like the *Cotoneaster horizontalis*." (*F. N. Meyer.*)

Distribution.—Only known from the vicinity of Ichang in the Province of Hupeh, China.

27048. *MORUS ALBA* L.

White mulberry.

"Variety *fastigiata*. Quite rare, and may be of value in the Southern States as a pyramidal tree." (*F. N. Meyer.*)

27049 to 27072.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, March 12, 1910.

Cuttings of the following:

27049 to 27057. *PUNICA GRANATUM* L.

Pomegranate.

From near Sukhum-Kale, Caucasus, Russia. "(No. 421 to 429, February 10, 1910.) A collection of named pomegranates obtained from the experimental station near Sukhum. As the plants were only recently received at the station, no definite information could be obtained regarding them at present." (*Meyer.*)

27049. "*Krylezy-Kabuk.* (No. 421.)"

27050. "*Seville a gros grain.* (No. 422.)"

27051. "*Alopar.* (No. 423.)"

27052. "*Sushinski rannyi.* (No. 424.)"

27053. "*Di Brindishi.* (No. 425.)"

27054. "*A frutto grosso.* (No. 426.)"

27055. "*Yelisavetpolski sladkii.* (No. 427.) A large-fruited variety having red flesh and of sour taste. A local Caucasian variety, obtained originally from the vicinity of Yelisavetpol (Caucasus)." (*Meyer.*)

27056. "*Shirinar.* (No. 428.)"

27057. "*Nain des Antilles.* (No. 429.)"

27058. *CITRUS MEDICA* L.

Lemon (?)

From near Sukhum-Kale, Caucasus, Russia. "(No. 435, February 11, 1910.) A large-fruited lemon, very juicy, and with few seeds. Has proved to be a heavy fruiter and to be more frost resistant than any other lemon in this locality. Found originally among a bunch of other citrus stock in the garden of Mr. Smitskoi, near Sukhum, where these cuttings were obtained." (*Meyer.*)

27049 to 27072—Continued.

27059. PRUNUS sp.

Plum.

From near Sukhum-Kale, Caucasus, Russia. "(No. 436, February 10, 1910.) A native plum, from the Caucasus, of bluish color, medium size, found wild in the mountains but also sparingly cultivated by the natives. Probably suitable for the Gulf region and for northern Florida. Obtained from the Experimental Station near Sukhum." (Meyer.)

27060. MALUS SYLVESTRIS Mill.

Apple.

From Dioscuria, near Sukhum-Kale, Caucasus, Russia. "(No. 437, February 16, 1910.) A native variety of apple, generally called *Afghasian* apple, grown by the natives for centuries. The fruits are large, of a grayish-green color except on the side exposed to the sun, where they are adorned with narrow, vertical, red stripes; of a fresh, sour taste; picked from the trees in the latter part of October or early November, they have to lie some time before being ripe; can be kept until late in spring. A good apple for the warmer sections of the United States and especially for the Gulf region. The young trees of this variety of apple are characterized by the very upright growth of the branches and the clean bark; when the trees get to be older, however, they become spreading and the bark begins to be rough. In the Caucasus, this variety is not very quickly attacked by woolly aphis, but when once this pest gets a hold on them, they become full of lumps and knots like the ordinary European varieties." (Meyer.)

27061. MALUS SYLVESTRIS Mill.

Apple.

From Dioscuria, near Sukhum-Kale, Caucasus, Russia. "(No. 438, February 16, 1910.) A Circassian apple indigenous to the Caucasus, said to be very fine, obtained originally from a native prince. Fit for the mild-wintered regions of the United States." (Meyer.)

27062. PYRUS COMMUNIS L.

Pear.

From Dioscuria, near Sukhum-Kale, Caucasus, Russia. "(No. 439, February 16, 1910.) A very early ripening variety of pear, called '*Duchesse de Sukhum*.' Of medium size and melting taste, ripens in June. Probably a good variety for the Southern States and especially the Gulf region." (Meyer.)

27063. PYRUS COMMUNIS L.

Pear.

From Dioscuria, near Sukhum-Kale, Caucasus, Russia. "(No. 440, February 16, 1910.) A variety of pear locally known as the '*Turkish pear*.' Fruits medium large, of beautiful shape, ripening in August. Trees very strong growers when young and producing heavy crops. Probably a good variety for the mild-wintered regions of the United States." (Meyer.)

27064. MORUS ALBA L.

White mulberry.

From Dioscuria, near Sukhum-Kale, Caucasus, Russia. "(No. 452, February 16, 1910.) Variety *tortuosa*. A strange ornamental mulberry, having branches that run zigzag. Of use as a decorative garden tree in regions where the winters are mild and the summers hot and dry." (Meyer.)

27065. OLEA EUROPAEA L.

Olive.

From Sukhum-Kale, Caucasus, Russia. "(No. 454, February 17, 1910.) A very large-fruited variety of olive, named '*Cucchi*,' bears black fruits the size of a small plum. Although the climate of this part of the Caucasus is rather unsuited to olives, being too moist, this variety fruits regularly here. Obtained from the Botanical Garden at Sukhum-Kale." (Meyer.)

27049 to 27072—Continued.**27066. CITRUS AURANTIUM SINENSIS L.****Orange.**

From Sukhum-Kale, Caucasus, Russia. "(No. 455, February 17, 1910.) A seedling orange, originated at the Botanical Garden at Sukhum-Kale. Of very strong growth, somewhat spiny, especially on strong shoots. Fruits medium sized, not over sweet and with rather numerous seeds. The trees, however, are hardier here in this locality of the Caucasus than any other variety according to Mr. A. Van de Velde, the head gardener in charge of the Botanic Garden, from whom these cuttings were obtained." (Meyer.)

27067. CITRUS AURANTIUM SINENSIS L.**Orange.**

From Sukhum-Kale, Caucasus, Russia. "(No. 456, February 17, 1910.) A seedling orange, originated a few years ago in the garden of Mr. Shwetsoff, at Sukhum-Kale. Fruit large, juicy, and sweet, with few seeds. Trees of medium-strong growth, with very dark-green foliage. Quite hardy in this part of the Caucasus. Obtained from the same source as No. 455 (S. P. I. No. 27066) and, like it, may be tested in the northern limits of successful orange culture in the United States." (Meyer.)

27068. PRIMULA VULGARIS Hill.**Primrose.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 457, February 10, 1910.) Variety *sibthorpii*. A beautiful wild primrose growing along moist embankments, producing masses of rather large flowers of a very beautiful purplish-blue color. A handsome spring-flowering plant for the mild-wintered sections of the United States." (Meyer.)

27069. FRAGARIA sp.**Strawberry.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 458, February 10, 1910.) A wild strawberry, occurring here and there along embankments, open woodlands, and even in dry calcareous cliffs. Flowers in early February and sometimes produces ripe fruits at the end of February; these fruits are said to be small but sweet. I suggest that this strawberry be used as a factor in creating a more drought and heat resistant strain of this favorite fruit than we have at the present." (Meyer.)

27070. VIOLA sp.**Violet.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 459, February 10, 1910.) A wild violet occurring at the edges of woodlands and on open places. Has large flowers of a beautiful dark-violet color, not very fragrant. Of value as an ornamental garden perennial in the mild-wintered sections of the United States and as an element in breeding more heat-resistant strains of this flower." (Meyer.)

27071. FICARIA sp.

From near Sukhum-Kale, Caucasus, Russia. "(No. 460, February 16, 1910.) A *Ficaria* in looks and habits between *F. ranunculoides* and *Caltha palustris*. Found growing in moist, open woodlands; flowers in February; the individual flowers often measure more than an inch in diameter, are of a bright-yellow color and stand out above the shining foliage. Recommended as an ornamental spring-flowering plant in the mild-wintered sections of the United States." (Meyer.)

27072. MEDICAGO sp.

From near Sukhum-Kale, Caucasus, Russia. "(No. 461, February 7, 1910.) Plants found in earth cliffs. To be tested in a mild climate." (Meyer.)

27073 to 27082. ZEA MAYS L.**Corn.**

From Mexico. Procured by Mr. Arnold Shanklin, American consul, Mexico City, Mexico. Received March 11, 1910.

Seeds of the following:

27073. From Puebla. Grown on the property of Mr. Pablo Petersen. Height of stalk, $19\frac{1}{2}$ feet. Yield 135 bushels per acre.

27074. From Valley of Mexico. Black seeded.

27075. From Oaxaca. Yellow seeded.

27076. From Oaxaca. White seeded.

27077. From Oaxaca. Black seeded.

27078. From Puebla, District of Chalchicomula.

This has a small cob. Grows in a cold climate, at an altitude of 8,000 feet.

27079. From Oaxaca. Mixed corn.

27080. From Puebla, District of Matamoras.

Dry, hot climate.

27081. From Guanajuato. Grown near Silao.

27082. NOTE.—The corn listed under this number was of three different varieties, the tags had become detached and the ears were mixed. The notes on the tags were as follows:

From Valley of Mexico.

From City of Puebla. Yield 76 bushels per acre. Matures in 6 months.

From near City of Puebla. Yield 40 bushels per acre.

27086 to 27088. DIOSPYROS KAKI L. f.**Persimmon.**

From Okitsu, Japan. Presented by Dr. Ouda, at the request of Mr. A. J. Perkins. Received March 19, 1910.

Cuttings of the following:

27086. *Fuyu.*

27088. *Yokono.*

27087. *Jiro.*

27089 to 27095.

From Gagri, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, March 17, 1910.

Cuttings and plants as follows:

27089. *PHILADELPHUS* sp.

From near Gagri, Caucasus, Russia. "(No. 405, February 2, 1910.) A mock orange, found on stony mountain slopes and in cliffs. Apparently very floriferous. Of value as an ornamental flowering shrub in mild-wintered regions." (*Meyer.*)

27090 and 27091. *MEDICAGO* sp.

From near Gagri, Caucasus, Russia. "(No. 413 and 414, January 31, 1910.) Alfalfas growing on the south side of cliffs. Apparently several species among this lot. As the winter in this part of the Caucasus is very mild these plants will probably not be able to stand any hard frost." (*Meyer.*)

27092. *MELILOTUS* sp.

From near Gagri, Caucasus, Russia. "(No. 416, January 31, 1910.) Found along a road in stony debris; perhaps of value as a fodder plant." (*Meyer.*)

27089 to 27095—Continued.**27093. PSORALEA sp.**

From near Gagri, Caucasus, Russia. "(No. 417, January 31, 1910.) Found growing on dry places in decomposed rock. This legume may be of value as a fodder plant in mild-wintered regions where hot summers prevail." (*Meyer.*)

27094. VINCA sp.

From near Gagri, Caucasus, Russia. "(No. 418, January 31, 1910.) A *Vinca* found in shady nooks in the mountains, often hanging down between rocks. Apparently distinct from the ordinary *Vinca major*. Of value as a ground cover or basket plant in mild-wintered regions." (*Meyer.*)

27095. (Undetermined.)

From near Gagri, Caucasus, Russia. "(No. 420, February 1, 1910.) A grass growing plentifully here and there between boulders and rocks on mountain sides. Perhaps of value as a fodder grass in mild-wintered regions." (*Meyer.*)

27097 and 27098. PYRUS spp.

From Kew, England. Presented by Dr. David Prain, director, Royal Botanic Garden. Received March 21, 1910.

Cuttings of the following:

27097. PYRUS CHINENSIS Lindl.**Sand pear.****27098. PYRUS SIMONI Carr.**

Distribution.—The Provinces of Chihli, Shingking, and Kiangsi, in China, and in Korea, Manchuria, and Japan.

27099. RAVENSARA AROMATICA Sonner.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received March 14, 1910.

"A fairly interesting spice tree." (*Regnard.*)

This species of *Ravensara* is a large, bushy tree with a pyramidal head, entire leaves, small flowers, and pear-shaped fruits the size of a small hickory nut. The leaves and fruit are prepared by rolling into a ball which is allowed to hang in the air for a month; then placed in boiling water for five minutes, and afterwards dried in the sun or before a fire. This process preserves the leaves and fruits so that they keep for several years. (*Adapted from Sonnerat, Voyage aux Indes Orientales, vol. 2, p. 226.*)

Distribution.—The island of Madagascar.

27101 to 27105. MEDICAGO SATIVA L.**Alfalfa.**

From Victoria, Minn. Obtained by Mr. J. M. Westgate from the farm of Mr. Henry Gerdson, August 11, 1909. Numbered for convenience in recording distribution March 21, 1910.

"These five selected plants were presumably 40 years old, as the field from which they were taken was seeded in 1868 or 1869, according to Mr. Gerdson, and there has been no apparent reseeding since. The crowns of all the plants were very large and apparently uniform in age; the individual crowns were often 2 feet in diameter and were occasionally broken up into two or more separate but adjacent plants." (*Westgate.*)

27106. CARICA PAPAYA L.**Papaya.**

From Bangalore, Mysore, India. Presented by Rev. N. L. Rockey, Gonda, United Provinces, India. Received March 21, 1910.

Seed supposedly of this same variety received under No. 25692.

27107 to 27111.

Presented by Mr. E. C. Parker, agriculturist, Bureau of Agriculture, Industry and Commerce, Mukden, Manchuria. Received March 19, 1910.

Seeds of the following; descriptive notes by Mr. Parker:

27107. PRUNUS sp.**Cherry.**

"Chinese name *Ying tao*. Common in the hills of Manchuria as far north as 44° to 45° north latitude. Growth resembles the sand cherry of America, almost shrubby. Sometimes attains a height of 10 feet. Fruit borne along main stalks similar to sand cherry and gooseberry. Valuable in America for ornamental purposes, for grafting, and for cookery. The fruit is tart and well flavored."

27108. MALUS sp.**Crab apple.**

"Chinese name *Shan ting tsze*. Common in the hills of Manchuria as far north as 44° to 45° north latitude. Very hardy and healthy growth. Fruit about one-half to three-fourths inch in diameter, resembling a thorn apple. Trees attain a height of 10 to 15 feet. Valuable in America for grafting purposes only."

27109. PRUNUS ARMENIACA L.**Apricot.**

"Chinese name *Hing*. Common in the hills of Manchuria as far north as 43° north latitude. A small, spreading tree. Fruit small and fibrous, poor quality. Valuable in America for grafting and budding purposes only."

27110. AMYGDALUS PERSICA L.**Peach.**

"Chinese name *Tao*. Same description as the preceding (S. P. I. No. 27109)."

27111. AMYGDALUS PERSICA L.**Peach.**

"Chinese name *Ta po tao*. A large white peach, native in Shantung Province, China (Chefoo district). Quality of fruit, fair; growth of tree not known."

27112 to 27150.

From Kew, England. Presented by Dr. David Prain, director, Royal Botanic Gardens. Received February 4, 1910.

Seeds of the following:

27112. ACTAEA RUBRA (Ait.) Willd.

Distribution.—Nova Scotia to New Jersey and Pennsylvania, and west to the Rocky Mountains.

27113. ARONIA ARBUTIFOLIA (L.) Pers.

Distribution.—In swamps and wet woods, from Nova Scotia to Minnesota, and south to Florida and Louisiana.

27114. ARONIA MELANOCARPA (Michx.) Ell.

Distribution.—In swamps and low woods, or occasionally on rocks, from Nova Scotia to Florida, and west to Michigan.

27115. BERBERIS ANGULOSA Wall.

Distribution.—The temperate slopes of the Himalayas, at an altitude of 11,000 to 13,000 feet, in the Provinces of Nepal and Sikkim, northern India.

27116. BERBERIS ARISTATA DC.

Distribution.—Temperate slopes of the Himalayas, at an altitude of 6,000 to 10,000 feet, between Bhotan and Kunawar; also in the Nilgiri Hills in southern India, and in the mountains of Ceylon, at an altitude of 6,000 to 7,000 feet.

27112 to 27150—Continued.

27117. *BERBERIS CONCINNA* Hook. f.

Distribution.—Interior valleys of the Himalayas, at an elevation of 12,000 to 13,000 feet, in the Province of Sikkim, northern India.

27118. *BERBERIS DICTYOPHYLLA* Franch.

Distribution.—Slopes of the mountains in the Province of Yunnan, southern China, at an elevation of 10,000 feet.

27119. *BERBERIS PACHYACANTHA* Koehne.

Distribution.—Slopes of the Himalayas, at an altitude of 10,000 feet, in the Province of Kashmir, northern India.

27120. *BERBERIS THUNBERGII* DC.

Distribution.—Slopes of the mountains on the island of Kiushu, Japan. Generally cultivated as an ornamental.

27121. *BERBERIS UMBELLATA* Wall.

Distribution.—Temperate slopes of the Himalayas at an elevation of 9,000 to 11,000 feet, from Kumaon to Bhotan, India.

27122. *BERBERIS VIRESCENS* Hook. f.

Distribution.—Slopes of the Himalayas at an elevation of 9,000 feet, in the provinces of Sikkim and Bhotan, northern India.

27123. *MALUS MEDWIETZKYANA* Dieck.

NOTE.—These seeds were received under the name *Pyrus niedzwetzkyana*. The first name given to this apple, *Malus medwietzkyana*, appears in the Neuheiten-Offerte des National-Arboretums zu Zoeschen bei Merseburg, for 1891, page 16. Dr. Dieck here states that it was collected by "Herrn Gerichtspräsidenten Medwietzky." In the same catalogue for 1892-3, Dr. Dieck gives the collector's name as "Herrn Gerichtspräsidenten Niedzwetzky," and calls the apple "*Malus niedzwetzkyana*." Being trade catalogues, a description printed therein is not considered as botanical publication of these names. Another notice of this apple appears in the Wiener Garten Zeitung for April, 1891, page 164. Here, under the name *Malus Medwietzkyana*, are given the statements found in Dieck's 1891 catalogue, and the description being sufficient for identification, it is regarded as the place of botanical publication. Also, in the Gardeners' Chronicle for April 11, 1891, page 461, under the name *Malus medwietzkyana*, the same notes and descriptions are given, evidently taken from Dieck's catalogue.

Koehne, Deutsche Dendrologie 259, 1893, under *Malus paradisiaca*, mentions *M. niedzwetzkyana*, stating that he is not sure it is a form of *M. paradisiaca*. Hemsley, Curtis's Botanical Magazine, plate 7975, 1904, under the name *Pyrus niedzwetzkyana*, gives a figure and a detailed description of the plant and cites all the above-mentioned publications. Regarding the specific name he remarks: "As to the spelling of the distinctive name, we have adopted the one used by the author in his second account of the plant, where, however, he gives no explanation of the deviation from the first."

As to the correct spelling of the name of Dr. Dieck's patron, Mr. A. V. Babine, assistant in charge of the Slavic section of the Library of Congress, in reply to an inquiry as to the correct spelling of the name, states: "I have looked up the name you mention. The second form given by you (Medwietzky) is more nearly correct." There seems, therefore, to be no reason for the change of spelling adopted by Hemsley, and the correct name for this apple remains *Malus medwietzkyana*, as first used by Dieck and as published in the Wiener Garten Zeitung, above cited. (*H. C. Skeels.*)

27112 to 27150—Continued.

Distribution.—The valley of the Kashgar River in eastern Turkestan, both wild and cultivated, and also cultivated throughout southwestern Siberia and central Asia.

27124. *MALUS PRUNIFOLIA* (Willd.) Borkh.

Distribution.—Considered by some authors to be a hybrid between *Malus sylvestris* and *M. baccata*, probably arising in Siberia.

27125. *MALUS RINGO* Sieb.

Distribution.—Central Japan, especially in the vicinity of Fujiyama Mountain.

27126. $\times$ *MALUS SCHEIDECKERI* Spaeth.

A hybrid of garden origin between *Malus floribunda* and *M. prunifolia*.

27127. *MALUS SIKKIMENSIS* (Hook.) Koehne.

Distribution.—Slopes of the Himalayas in the province of Sikkim, north-eastern India.

27128. *MALUS TORINGO* Sieb.

Distribution.—Originally from Japan; cultivated in European and American gardens as an ornamental tree.

27129. *PYRUS BALANSAE* Decaisne.

Distribution.—Wooded slopes of the hills in the province of Laristan, southern Persia, at an elevation of 5,200 feet.

27130. $\times$ *PYRUS IRREGULARIS* Moench.

Distribution.—A hybrid between *Pyrus communis* and *Sorbus aria*, arising in a garden in France, and first described by Bauhin in the year 1650.

27131. *PYRUS LONGIPES* Coss. and Dur.

Distribution.—Forests on the slopes of the Atlas Mountains in the province of Batna and on the Aures Hills in western Algeria.

27132. *PYRUS MICHAUXII* Bosc.

Probably a hybrid between *Pyrus amygdaliformis* and *P. nivalis*.

27133. *PYRUS NIVALIS* Jacq.

Distribution.—Slopes of the mountains in southern Germany, France, and northern Italy, and in the Austrian Alps.

27134. *PYRUS NIVALIS ELAEAGRIFOLIA* (Pall.) Schneider.

Distribution.—Throughout Asia Minor and in Armenia.

27135. *PYRUS SINAI* Desf.

Distribution.—The slopes of Mount Sinai, Arabia.

27136. $\times$ *SORBUS ALPINA* (Willd.) Heynh.

This form is supposed to be a hybrid between *Sorbus aria* and *Aronia arbutifolia*.

27137. *SORBUS AMERICANA* Marsh.

Distribution.—Mountain slopes from Labrador to North Carolina and west to Michigan.

27138. *SORBUS ARIA GRAECA* (Lodd.) Boiss.

Distribution.—Slopes of the mountains in Greece, Crete, Crimea, and Syria.

27139. *SORBUS AUCUPARIA LANUGINOSA* (Kit.) Beck.

Distribution.—This form occurs with the species in the south-central and southeastern part of Europe.

27112 to 27150—Continued.

27140. × *SORBUS HETEROPHYLLA* (Du Roi) Reichenb.

This form is supposed to be a hybrid between *Sorbus aucuparia* and *Aronia arbutifolia*.

27141. × *SORBUS LATIFOLIA* (Lam.) Pers.

Distribution.—Considered to be a hybrid between *Sorbus torminalis* and *S. aria*, arising in the forests of Fontainebleau, France.

27142. *TRICHOLAENA ROSEA* Nees.

Distribution.—Throughout tropical Africa and extending south to the Cape; also Madagascar and in southern Arabia.

27143. *TRIFOLIUM JOHNSTONI* Oliver.

Distribution.—The slopes of Mount Kilimanjaro at an elevation of 10,000 feet, in the southern part of British East Africa.

27144. *TRIFOLIUM SCABRUM* L.

Distribution.—Dry, stony, and grassy places in central Europe, extending from Holland, Belgium, and the eastern provinces of France, through Germany, Switzerland, and Austria, to Bosnia and Montenegro.

27145. *TRIFOLIUM PERREYMONDI* Gren.

Distribution.—Apparently known only from the vicinities of Roquebrune and Frejus in the province of Var, southeastern France.

27146. *TRIGONELLA COERULEA* (L.) Ser.

Distribution.—The mountain slopes of the northern part of Spain, the southern provinces of Russia, and in the region of the Caucasus Mountains.

27147. *TRIGONELLA CORNICULATA* L.

Distribution.—The countries along the Mediterranean from Spain and southern France through Italy and Greece to Asia Minor and in northern Africa.

27148. *TRIGONELLA CRETICA* Boiss.

Distribution.—The island of Crete, and in Asia Minor and northern Africa.

27149. *TRIGONELLA OVALIS* Boiss.

Distribution.—Southern Spain, sandy banks of the Guadalhorce River in the province of Malaga, and in waste places near cultivated fields in the vicinity of Riopar, province of Murcia.

27150. *TRIGONELLA POLYCERATA* L.

Distribution.—Borders of cultivated fields and waste places in central and northern Spain and in northern Africa; introduced into France in the vicinity of Marseille; and near Verviers, Belgium, and Darmstadt, Germany.

27151 to 27157.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, March 19, 1910.

Cuttings of the following:

27151. *MALUS SYLVESTRIS* Mill.

Apple.

From near Kopetnari, Caucasus, Russia. "(No. 462, March 1, 1910.) A yellow winter apple of medium size and fairly firm flesh. The trees are able to stand high summer temperatures, but require mild winters. Obtained from a native Mingrelian orchard. To be tested in the southern sections of the United States." (Meyer.)

27151 to 27157—Continued.**27152. MALUS SYLVESTRIS Mill.****Apple.**

From near Kopetnari, Caucasus, Russia. "(No. 463, March 1, 1910.) A red apple, said to be large and fine looking. For other remarks see preceding number (S. P. I. No. 27151)." (*Meyer.*)

27153. MALUS SYLVESTRIS Mill.**Apple.**

From near Kopetnari, Caucasus, Russia, "(No. 464, March 1, 1910.) A white apple said to grow very large; according to a native fruit grower, some fruits weigh several pounds each. For other remarks see preceding numbers (S. P. I. Nos. 27151 and 27152)." (*Meyer.*)

27154. PRUNUS AVIUM L.**Cherry.**

From near Kopetnari, Caucasus, Russia. "(No. 465, March 1, 1910.) A sweet, white cherry, having large fruits and ripening in early June. Able to stand high summer temperatures. Said to be a very fine variety. Obtained from a native Mingrelian orchard." (*Meyer.*)

27155. PRUNUS AVIUM L.**Cherry.**

From near Kopetnari, Caucasus, Russia. "(No. 466, March 1, 1910.) A sweet, white cherry ripening in early June, fruits not as large as those of the preceding number (S. P. I. No. 27154). Obtained from a native Mingrelian orchard." (*Meyer.*)

27156. PRUNUS AVIUM L.**Cherry.**

From near Kopetnari, Caucasus, Russia. "(No. 467, March 1, 1910.) A sweet, red cherry, ripening very early, the end of April or beginning of May. Fruit not very large, but popular on account of its earliness. For other remarks see No. 465 (S. P. I. No. 27154)." (*Meyer.*)

27157. PRUNUS AVIUM L.**Cherry.**

From Quirili, Caucasus, Russia. "(No. 468, March 1, 1910.) A sweet, black, early, native Caucasian variety of cherry, ripening toward the end of May and able to stand high summer temperatures." (*Meyer.*)

27158. SOLANUM JAMESII Torr.**Potato.**

From Prescott, Ariz. Presented by Mr. Daniel Hatz. Received March 23, 1910. "Tubers of a native potato, grown in old willow land, without irrigation." (*Hatz.*)

Distribution.—On the slopes of the mountains at an elevation of 4,000 to 7,000 feet, from Colorado southward to Texas and Arizona.

27159 and 27160.

Presented by Mr. O. W. Barrett, Director of Agriculture, Lourenço Marquez, Portuguese East Africa. Received March 21, 1910.

Seeds of the following:

27159. BAUHINIA MONANDRA Kurz. (?)

From Deli, Portuguese Timor, East Indies. "(No. 32, February 18, 1910.) Ornamental shrub. Pod 20 to 22 cm. long. Probably new or very rare in America. Adapted to California, Gulf States, Porto Rico, etc." (*Barrett.*)

27160. ADANSONIA DIGITATA L.

From territory of Tete, Zambesia, Portuguese East Africa, "(No. 33, February 18, 1910.) Shisena name '*Chiwoolia*.' One of the largest if not the very largest variety (species?) of African Baobab, or 'Cream-of-Tartar' tree. Height 15 to 25 meters; diameter 2 to 10 meters. A most striking tree for frostless regions." (*Barrett.*)

27159 to 27160—Continued.

Distribution.—The Senegambia region in upper Guinea on the west coast of Africa, and along the eastern coast from Abyssinia south to the Mozambique district. Cultivated in India and Ceylon.

"This is the famous Baobab or Monkey-bread tree, known also in India as the Cork tree. The trunk attains a height of 40 to 60 feet and a diameter of 30 feet. Its bark furnishes cordage, and the pulp of the fruit is slightly acid and refrigerant." (*Oliver, Flora Tropical Africa, vol. 1, p. 213.*)

27161 to 27163.

From Algeria. Presented by Dr. L. Trabut, Algiers, Algeria. Received March 14 and 18, 1910.

Seeds of the following:

27161. ANDROPOGON SORGHUM (L.) Brot.

Durra.

"Variety *tinctorium*. Used for coloring hides red, at Insalah, in Arabia Tafsut hamra." (*Trabut.*)

"I have compared this with G. I. No. 103 which was received directly from Dr. Trabut in 1904. It originated on the Oasis de Couat, below 30° north latitude. The two varieties though both durras, are not closely related. The long, rather thin, reddish glumes of No. 27161, and the medium-sized, obovate, yellowish-white seeds are quite different from the leathery, black glumes and very large seeds of G. I. No. 103." (*Carleton R. Ball.*)

27162. ZIZIPHUS LOTUS (L.) Lam.

See No. 21995 for previous introduction.

27163. ASPARAGUS STIPULARIS Forsk.

Distribution.—In dry places along roads and in vineyards, in Portugal and southern Spain, in Sicily, the Canary Islands, and in the northern part of Africa.

27164. STIZOLOBIUM sp.

From Yokohama, Japan. Purchased from the Yokohama Nursery Company. Received March 22, 1910.

27165. ROSA sp.

Rose.

From Shanghai, China. Presented by Rev. J. M. W. Farnham. Received March 15, 1910.

"Cuttings from bushes growing wild on the mountain. It is a rambler, and, from the description, seems to me to resemble the *Cherokee*." (*Farnham.*)

27166 to 27170.

From Buitenzorg, Java. Presented by the Director of the Botanic Garden. Received March 21, 1910.

Seeds of the following:

27166 to 27168. NEPHELIUM LAPPACEUM L.

Ramboetan.

27166. Variety *si matjan*.

27167. Variety *sinjouja*.

27168. Variety *lebak boeloes*.

See Nos. 25163 to 25165 for description.

27169. DURIO ZIBETHINUS Murr.

Distribution.—The Malayan Islands; cultivated in the Malay Peninsula.

27166 to 27170—Continued.**27170. ARTOCARPUS INTEGRA** (Thunb.) L. f. [*integrifolia*].

The earliest spelling, 1776, of the specific name is *integra* as given above, the change to *integrifolia* having been made by Linnaeus f. in 1781.

Distribution.—Cultivated throughout the warmer parts of India and eastern Asia; probably native in the forests of the Western Ghats in India.

27172 to 27193.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, March 4, 1910.

Seeds of the following:

27172. OLEA EUROPAEA L.**Olive.**

From Nikita, Crimea, Russia. "(No. 1236a, January 24, 1910.) Collected from trees that have successfully withstood freezes of 15° Reaumur below zero (about -2° F.). To be tested in the regions recommended for Nos. 388 to 398 (S. P. I. Nos. 26801 to 26811)." (Meyer.)

27173. OLEA EUROPAEA L.**Olive.**

From near Gagri, Caucasus, Russia. "(No. 1237a, January 31, 1910.) Collected from wild growing trees which occur quite plentifully on dry mountain slopes and on cliffs along the Caucasian shore of the Black Sea; they might have escaped from cultivation in the far past, as formerly this region was the center of a great civilization. These wild olive trees are very bushy and apparently very drought resistant and may be used in similar regions as recommended for Nos. 388 to 389 (S. P. I. Nos. 26801 to 26811)." (Meyer.)

27174. NICOTIANA TABACUM L.**Tobacco.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 1238a, February 12, 1910.) '*Trebizond*.' A very good variety of Turkish cigarette tobacco, producing medium-sized, long, oblong leaves, which assume a beautiful light-amber color when properly cured. This tobacco is grown in great quantities in this region and much exported. It is planted rather late in the season and needs a somewhat gravelly, warm soil to succeed well. Will probably be adapted to certain sections of northern Florida and southern Georgia." (Meyer.)

27175. NICOTIANA TABACUM L.**Tobacco.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 1239a, February 11, 1910.) '*Samsun*.' A good variety of Turkish cigarette tobacco, producing many rather small leaves (6 to 8 inches long) of pointed, oblong shape, which, when cured well, have a medium-dark chocolate-brown color. Grown and exported like the preceding variety in great quantities, although it is considered locally not to be as fine a product as the '*Trebizond*.' Likes a warm soil, rich in vegetable matter, and stands the sea air quite well, as some plantations are situated almost on the edge of the Black Sea." (Meyer.)

27176. NICOTIANA TABACUM L.**Tobacco.**

From Cherg, Caucasus, Russia. "(No. 1240a, February 7, 1910.) A form of Turkish cigarette tobacco, apparently between '*Trebizond*' and '*Samsun*.' Much planted on burned-over forest land, somewhat away from the sea-coast. For other remarks see Nos. 1238a and 1239a (S. P. I. Nos. 27174 and 27175)." (Meyer.)

27172 to 27193—Continued.**27177. CRATAEGUS sp.**

From near Gagri, Caucasus, Russia. "(No. 1241a, January 31, 1910.) A hawthorn growing in stony cliffs and on dry places. Mostly seen as a small shrub; has small leaves and bears small, scarlet berries, which persist throughout the winter on the bushes. Of value as an ornamental shrub in the southern parts of the United States." (Meyer.)

27178. CRATAEGUS sp.

From near Novai, Avon, Caucasus, Russia. "(No. 1242a, February 6, 1910.) A hawthorn, much resembling the preceding number, but of more robust habit, which may be accounted for by a different location. For further remarks see No. 1241a (S. P. I. No. 27177)." (Meyer.)

27179. CRATAEGUS sp.

From River Zjiep, Caucasus, Russia. "(No. 1243a, February 4, 1910.) A hawthorn growing into a tall shrub or small tree, having black, juicy berries, which persist through the winter. Found growing on dry and stony places. Of value like the preceding numbers (S. P. I. Nos. 27177 and 27178)." (Meyer.)

27180. ROSA sp.**Rose.**

From near Gagri, Caucasus, Russia. "(No. 1244a, January 31, 1910.) A very strong-growing wild rose, bearing many large fruits; found in rather dry, rocky locations. Probably a good stock in semitropical regions and for greenhouse forcing." (Meyer.)

27181. ROSA sp.**Rose.**

From near Gagri, Caucasus, Russia. "(No. 1245a, January 31, 1910.) A rose found in dry, exposed cliffs; of very vigorous growth, having many small fruits. Probably a good stock like the preceding number (S. P. I. No. 27180)." (Meyer.)

27182. ROSA sp.**Rose.**

From near Gagri, Caucasus, Russia. "(No. 1246a, January 31, 1910.) A wild rose, perhaps *Rosa cinnamomea*, found growing on a stony slope along a road. Has very long branches, which are nearly spineless. Of value in breeding experiments and as a stock like the preceding numbers." (Meyer.)

27183. CORONILLA VARIA L.

From Orianda, Crimea, Russia. "(No. 1247a, January 25, 1910.) A leguminous shrub, from 2 to 3 feet high, found growing on dry and stony places near the seaside. Perhaps of value as a fodder and also as an ornamental plant in semi-arid, mild-wintered regions." (Meyer.)

27184. SORBUS DOMESTICA L.**Mountain ash.**

From Yalta, Crimea, Russia. "(No. 1248a, January 25, 1910.) A mountain ash with large, edible fruits. The fruits are sold in fruit shops in Yalta as a delicacy, they are eaten when somewhat decomposed, like medlars, and taste very good. Of value as a fruit tree in mild-wintered regions, where the summers are warm and dry." (Meyer.)

Distribution.—Southern Europe, extending from southern France through the Balkans to Asia Minor, and occurring also in northern Africa.

27185. SORBUS sp.

From Orianda, Crimea, Russia. "(No. 1249a, January 25, 1910.) A small tree or large shrub, growing in shady places on the slopes of hills, apparently rare. Of value, perhaps, as an ornamental shrub in mild-wintered regions." (Meyer.)

27172 to 27193—Continued.

27186. *PUNICA GRANATUM* L.

Pomegranate.

From near Gagri, Caucasus, Russia. "(No. 1250a, January 31, 1910.) A pomegranate occurring wild in stony cliffs near the seashore. Of no particular value, save as an interesting wild plant, as the fruits are rather small and sour." (Meyer.)

27187. *ARBUTUS ANDRACHNE* L.

From Nikita, Crimea, Russia. "(No. 1251a, January 24, 1910.) A very interesting, ornamental, native tree of the Crimea, being evergreen and bearing scarlet edible berries, which vary much in size. Grows in stony cliffs and at the very brinks of precipices, where its gnarled, barkless, white or reddish trunks often give one the impression of some prehistoric creature. Of value as an ornamental tree or tall shrub in mild-wintered regions, where dry and hot summers prevail." (Meyer.)

Distribution.—In the woods on the lower slopes of the mountains of Greece and the Crimea and eastward through Asia Minor to Syria; also in the islands of the Grecian archipelago and in Crete and Cyprus.

27188. *PHOTINIA VILLOSA LAEVIS* (Thunb.) Dippel.

From near Berlin, Germany. "(No. 1252a, October 27, 1909.) A tall bush with dark-green, long-persistent foliage, covered in late summer and autumn with scarlet berries. Of ornamental value in gardens and parks. Collected from a specimen in the Späth nurseries near Berlin, Germany." (Meyer.)

Distribution.—The provinces of Chekiang, Kiangsi, and Hupeh in southeastern China, Port Chusan in Korea, and in Formosa and Japan.

27189. *BUPLEURUM FRUTICOSUM* L.

From Orianda, Crimea, Russia. "(No. 1253a, January 25, 1910.) Seeds of an umbelliferous evergreen shrub, found growing on shady places, often quite near the seashore. Appears to stand clipping quite well and is sparingly seen as a clipped hedge. Of value as a seaside shrub in mild-wintered regions, beneath trees and on shady places." (Meyer.)

Distribution.—Along the shores of the Mediterranean from Spain and Portugal to Syria and in northern Africa.

27190. *MEDICAGO RIGIDULA* (L.) Desr.

From near Nikita, Crimea, Russia. "(No. 1254a, January 24, 1910.) An annual alfalfa growing here and there on gravelly hill slopes. Of value as a spring forage plant in mild-wintered regions, where hot and dry summers prevail." (Meyer.)

27191. *ASPARAGUS* sp.

From Orianda, Crimea, Russia. "(No. 1255a, January 25, 1910.) A wild herbaceous asparagus, of climbing habits, found between shrubs near the seashore. Perhaps ornamental. Probably the same as No. 1234a (S. P. I. No. 26883). See this number for further remarks." (Meyer.)

27192. *VIOLA* sp.

Violet.

From near Gagri, Caucasus, Russia. "(No. 1256a, February 1, 1910.) The same as Nos. 411 and 412 (S. P. I. Nos. 26863 and 26864), under which numbers live plants were sent. See these numbers for remarks." (Meyer.)

27193. *RUSCUS HYPOGLOSSUM* L.

From near Gagri, Caucasus, Russia. "(No. 1257a, February 1, 1910.) The beautiful, large-leaved butcher's-broom found on shady, somewhat moist

27172 to 27193—Continued.

places in the forest and between shrubbery and rocks. Very ornamental with its large, glossy, dark-green leaves, especially when bearing its large, orange-scarlet berries. Of value as a cover plant on shady places in parks and gardens in the southern United States." (*Meyer.*)

Distribution.—Shady banks among the mountains of southern Europe, extending from Spain, Italy, and southern Germany southeastward to Macedonia.

27194 to 27198.

From Shanghai, China. Presented by Rev. J. M. W. Farnham. Received March 25, 1910.

Seeds of the following:

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| 27194. CANNABIS SATIVA L. | Hemp. |
| 27195. DOLICHOS LABLAB L. | Bonavist bean. |
| 27196 to 27198. GLYCINE HISPIDA (Moench) Maxim. | Soy bean. |
| 27196. Large yellow seeded. | 27198. Black seeded. |
| 27197. Large green seeded. | |

27199. VIGNA UNGUICULATA (L.) Walp. Cowpea.

From Philadelphia, Pa. Procured from Mr. Wm. Henry Maule. Received March 25, 1910.

Panmure Early Wonder.

"This is a valuable early and productive variety, yields enormously of shelled peas, which are excellent for table use during the winter. It makes an ordinary vine, not so rank as some other varieties; the stems that support the pods stand erect, 6 to 10 inches above all the vines, having 3 to 6 pods to each stem, and some pods contain as many as 20 peas, making them very easy to gather by hand picking, producing an average yield of 40 bushels of shelled peas per acre. A good soil improver, and relished by all farm stock." (*Maule.*)

27200. AGROSTIS ALBA L. Creeping bent-grass.

From Darmstadt, Germany. Received through Mr. Conrad Appel, March, 1910. *South German.* Said to be the true creeping bent-grass.

27201 to 27288.

Grown during the season of 1909 at the experimental substation at Dickinson, N. Dak., for Mr. Charles J. Brand,¹ under the supervision of Prof. L. R. Waldron, and transmitted through Mr. Charles H. Clark. Numbered March, 1910.

Seed of the following; notes by Mr. Charles J. Brand.

- | | |
|---|-----------------|
| 27201 to 27257. MEDICAGO SATIVA L. | Alfalfa. |
|---|-----------------|

Seed of open-pollinated plants grown from seed sown in 1908.

- 27201.** *Grimm.* Grown from P. L. H. No. 3235. Source of parent seed, Fargo, N. Dak. (1900-1904). Introduced from Baden, Germany (1858). Sixty plants yielded 3½ pounds of seed. Average per plant 23.7 grams; 560 seeds per gram.

¹ See Bulletin 185, Bureau of Plant Industry.

27201 to 27288—Continued.**27201 to 27257—Continued.**

- 27202.** *Grimm*. Grown from S. P. I. No. 21938. Source of parent seed, Excelsior, Minn. (1894–1907). Introduced from Baden, Germany. Fifty-four plants yielded $2\frac{3}{4}$ pounds of seed. Average per plant 20 grams; 527 seeds per gram.
- 27203.** *Acclimatized Turkestan*. Grown from P. L. H. No. 3252. Source of parent seed, Highmore, S. Dak. (1899–1906). Introduced from Tashkend, Turkestan (1898). Fifty-eight plants yielded $1\frac{1}{2}$ pounds of seed. Average per plant 8.8 grams; 649 seeds per gram.
- 27204.** *Mongolian*. Grown from S. P. I. No. 21232. Source of parent seed, Mongolia (small seed, imported 1907). Sixty-eight plants yielded $2\frac{1}{2}$ pounds of seed. Average per plant 16.8 grams; 476 seeds per gram.
- 27205.** *Turkestan*. Grown from S. P. I. No. 21032. Source of parent seed, Turkestan (imported 1907). Forty-two plants yielded $1\frac{1}{2}$ pounds of seed. Average per plant 16 grams; 589 seeds per gram.
- 27206.** *South Dakota 167 (Baltic)*. Grown from P. L. H. No. 3251. Source of parent seed, Highmore, S. Dak. (1905–1906). Grown at Baltic, S. Dak., 1894–1904. Forty-five plants yielded $4\frac{1}{4}$ pounds of seed. Average per plant 42 grams; 506 seeds per gram.
- 27207.** *Mongolian*. Grown from P. L. H. No. 2125. Source of parent seed, Mongolia (medium seed, imported 1907). Forty-four plants yielded $1\frac{1}{2}$ pounds of seed. Average per plant 11 grams; 459 seeds per gram.
- 27208.** *Canadian*. Grown from S. P. I. No. 13436. Source of parent seed, Canada (imported 1904). Forty-one plants yielded $1\frac{1}{4}$ pounds of seed. Average per plant 14 grams; 579 seeds per gram.
- 27209.** *Montana*. Grown from S. P. I. No. 12747. Source of parent seed, Billings, Mont. (crop of 1904). Thirty-eight plants yielded 1 pound of seed. Average per plant 11.8 grams; 606 seeds per gram.
- 27210.** *Mongolian*. Grown from P. L. H. No. 2124. Source of parent seed, Mongolia (large seed, imported 1907). Forty-two plants yielded $1\frac{1}{4}$ pounds of seed. Average per plant 13 grams; 470 seeds per gram.
- 27211.** *Commercial Turkestan*. Grown from S. P. I. No. 20988. Source of parent seed, Turkestan (imported 1907). Thirty-four plants yielded 1 pound of seed. Average per plant 13 grams; 615 seeds per gram.
- 27212.** *Canadian*. Grown from S. P. I. No. 21247. Source of parent seed, Canada (imported 1907). Twenty-six plants yielded three-fourths pound of seed. Average per plant 12.9 grams; 545 seeds per gram.
- 27213.** *Turkestan*. Grown from S. P. I. No. 9453. Source of parent seed, Bokhara, Turkestan (imported 1903). Thirty plants yielded 1 pound of seed. Average per plant 15 grams; 582 seeds per gram.
- 27214.** *Commercial Turkestan*. Grown from S. P. I. No. 18751. Source of parent seed, Turkestan (imported 1906). Twenty-seven plants yielded one-half pound of seed. Average per plant 8 grams; 627 seeds per gram.

27201 to 27288—Continued.**27201 to 27257—Continued.**

- 27215.** *French*. Grown from S. P. I. No. 21187. Source of parent seed, France (imported 1907). Twenty-seven plants yielded $1\frac{1}{2}$ pounds of seed. Average per plant 29 grams; 508 seeds per gram. (Commercial sand lucern.)
- 27216.** *German*. Grown from S. P. I. No. 21217. Source of parent seed, Germany (imported 1907). Twenty-three plants yielded $1\frac{1}{2}$ pounds of seed. Average per plant 22 grams; 537 seeds per gram. (Commercial sand lucern.)
- 27217.** *Turkestan*. Grown from S. P. I. No. 19968. Source of parent seed, Samarkand, Turkestan (grown in Kansas). Seventeen plants yielded five-eighths pound of seed. Average per plant 16 grams; 611 seeds per gram.
- 27218.** *Turkestan*. Grown from S. P. I. No. 9452. Source of parent seed, Karabulak, Turkestan (imported 1903). Twenty plants yielded three-fourths pound of seed. Average per plant 17 grams; 612 seeds per gram.
- 27219.** *Nebraska*. Grown from S. P. I. No. 12820. Source of parent seed, Clearwater, Nebr. (crop of 1904). Twenty plants yielded $1\frac{1}{2}$ pounds of seed. Average per plant 25 grams; 531 seeds per gram.
- 27220.** *Montana*. Grown from S. P. I. No. 12816. Source of parent seed, Chinook, Mont. (crop of 1904). Nineteen plants yielded $1\frac{1}{2}$ pounds of seed. Average per plant 35 grams; 565 seeds per gram.
- 27221.** *Nebraska, dry land*. Grown from S. P. I. No. 21945. Source of parent seed, Sextorp, Nebr. (crop of 1907). Sixteen plants yielded three-fourths pound of seed. Average per plant 21 grams; 535 seeds per gram.
- 27222.** *Alt-Deutsche Fränkische Luzerne*. Grown from P. L. H. No. 3321. Source of parent seed, Baden, Germany (imported 1908). Eighteen plants yielded 1 pound of seed. Average per plant 25 grams; 495 seeds per gram.
- 27223.** First quality commercial. Grown from S. P. I. No. 11275. Source of parent seed, purchased in Chicago, 1904. Fifteen plants yielded one-half pound of seed. Average per plant 15 grams; 545 seeds per gram.
- 27224.** *Russia*. Grown from S. P. I. No. 13857. Source of parent seed, Simbirsk, Russia (imported 1905). Twelve plants yielded one-half pound of seed. Average per plant 18 grams; 502 seeds per gram.
- 27225.** *Turkestan*. Grown from S. P. I. No. 14786. Source of parent seed, Tashkend, Turkestan (imported 1905). Thirteen plants yielded one-half pound of seed. Average per plant 17 grams; 576 seeds per gram.
- 27226.** *Algerian*. Grown from S. P. I. No. 12803. Source of parent seed, Setif, Algeria (imported 1905). Fourteen plants yielded five-eighths pound of seed. Average per plant 20 grams; 538 seeds per gram.
- 27227.** *Mexican*. Grown from S. P. I. No. 11652. Source of parent seed, Guanajuato, Mexico (imported 1904). Seven plants yielded three-sixteenths pound of seed. Average per plant 12 grams; 548 seeds per gram.

27201 to 27288—Continued.**27201 to 27257—Continued.**

- 27228.** Kansas. Grown from S. P. I. No. 12671. Source of parent seed, Lawrence, Kans. (crop of 1904). Ten plants yielded three-fourths pound of seed. Average per plant 37 grams; 505 seeds per gram.
- 27229.** *German.* Grown from S. P. I. No. 22418. Source of parent seed, Germany (imported 1908). Eleven plants yielded three-fourths pound of seed. Average per plant 31 grams; 519 seeds per gram. (Commercial sand lucern.)
- 27230.** Utah, irrigated. Grown from S. P. I. No. 21828. Source of parent seed, Deseret, Utah (crop of 1907). Eleven plants yielded three-fourths pound of seed. Average per plant 31 grams; 581 seeds per gram.
- 27231.** Montana. Grown from S. P. I. No. 13237. Source of parent seed, Chinook, Mont. (crop of 1904). Twelve plants yielded 1½ pounds of seed. Average per plant 42 grams; 530 seeds per gram.
- 27232.** Colorado. Grown from S. P. I. No. 12398. Source of parent seed, Fort Collins, Colo. (crop of 1904). Nine plants yielded three-eighths pound of seed. Average per plant 19 grams; 530 seeds per gram.
- 27233.** Nebraska. Grown from S. P. I. No. 13259. Source of parent seed, Milburn, Nebr. (crop of 1904). Ten plants yielded one-half pound of seed. Average per plant 22 grams; 512 seeds per gram.
- 27234.** Utah, dry land. Grown from P. L. H. No. 3255. Source of parent seed, Nephi, Utah (crop of 1907). Nine plants yielded one-half pound of seed. Average per plant 25 grams; 582 seeds per gram.
- 27235.** *Turkestan.* Grown from S. P. I. No. 9359. Source of parent seed, Erivan, Russia (imported 1903). Seven plants yielded one-fourth pound of seed. Average per plant 16 grams; 511 seeds per gram.
- 27236.** Mexican. Grown from S. P. I. No. 11651. Source of parent seed, Pueblo, Mexico (imported 1904). Seven plants yielded one-eighth pound of seed. Average per plant 8 grams; 530 seeds per gram.
- 27237.** Utah, irrigated. Grown from S. P. I. No. 12784. Source of parent seed, Emery, Utah (crop of 1904). Nine plants yielded one-fourth pound of seed. Average per plant 12.4 grams; 560 seeds per gram.
- 27238.** *German.* Grown from S. P. I. No. 21269. Source of parent seed, Germany (imported 1908). Eight plants yielded 1 pound of seed. Average per plant 56 grams; 537 seeds per gram. (Commercial sand lucern.)
- 27239.** Utah, dry land. Grown from P. L. H. No. 3256. Source of parent seed, Nephi, Utah (crop of 1907). Eight plants yielded three-fourths pound of seed. Average per plant 42 grams; 508 seeds per gram.
- 27240.** Ordinary American. Grown from P. L. H. No. 3346. Source of parent seed, Richardton, N. Dak. (crop of 1907). Six plants yielded one-fourth pound of seed. Average per plant 18 grams; 603 seeds per gram.

27201 to 27288—Continued.

27201 to 27257—Continued.

27241. *Turkestan*. Grown from S. P. I. No. 991. Source of parent seed, Tashkend, Turkestan (imported 1898). Six plants yielded one-half pound of seed. Average per plant 37 grams; 606 seeds per gram.
27242. *Turkestan*. Grown from S. P. I. No. 20437. Source of parent seed, Tashkend, Turkestan (grown in Utah 1900–1906). Seven plants yielded three-sixteenths pound of seed. Average per plant 12 grams; 524 seeds per gram.
27243. *Turkestan*. Grown from S. P. I. No. 9450. Source of parent seed, Askabad, Turkestan (imported 1903). Four plants yielded three-sixteenths pound of seed. Average per plant 21 grams; 632 seeds per gram.
27244. Utah, irrigated. Grown from S. P. I. No. 21829. Source of parent seed, Deseret, Utah (crop of 1907). Seven plants yielded one-fourth pound of seed. Average per plant 16 grams; 534 seeds per gram.
27245. *French*. Grown from S. P. I. No. 20896. Source of parent seed, France (imported 1907). Five plants yielded one-fourth pound of seed. Average per plant 22.4 grams; 540 seeds per gram. (Commercial sand lucern.)
27246. Utah, dry land. Grown from S. P. I. No. 21867. Source of parent seed, Nephi, Utah (crop of 1907). Five plants yielded one-fourth pound of seed. Average per plant 22.4 grams; 550 seeds per gram.
27247. Utah, dry land. Grown from S. P. I. No. 22559. Source of parent seed, Gunnison, Utah (crop of 1907). Four plants yielded one-fourth pound of seed. Average per plant 28 grams; 581 seeds per gram.
27248. Commercial *Turkestan*. Grown from S. P. I. No. 18425. Source of parent seed, Turkestan (imported 1906). Three plants yielded 14 grams of seed. Average per plant 5 grams; 524 seeds per gram.
27249. *Poitou*. Grown from S. P. I. No. 12695. Source of parent seed, France (imported 1905). Four plants yielded three-eighths pound of seed. Average per plant 42 grams; 504 seeds per gram.
27250. Utah, dry land. Grown from S. P. I. No. 12409. Source of parent seed, Diamond Fork, Utah (crop of 1904). Three plants yielded one-fourth pound of seed. Average per plant 37 grams; 489 seeds per gram.
27251. *Italian*. Grown from S. P. I. No. 22416. Source of parent seed, Piedmont, Italy (imported 1908). One plant survived the winter of 1908–9, but its exact yield was lost; 459 seeds per gram.
27252. *Turkestan*. Grown from S. P. I. No. 13999. Source of parent seed, Tashkend, Turkestan (grown in Utah, 1900–1904). One plant yielded 12 grams of seed.
27253. *Argentine*. Grown from S. P. I. No. 3508. Source of parent seed, Mendoza, Argentina (imported in 1899). One plant yielded no seed.
27254. *Provence*. Grown from S. P. I. No. 22417. Source of parent seed, Germany (imported 1908). One plant yielded 28 grams of seed; 501 seeds per gram.

27201 to 27288—Continued.**27201 to 27257—Continued.**

27255. *Argentine.* Grown from S. P. I. No. 3507. Source of parent seed Buenos Aires, Argentina (imported in 1899). One plant yielded 10 grams of seed.

27256. Utah, irrigated. Grown from S. P. I. No. 22558. Source of parent seed, Gunnison, Utah (crop of 1907). Eight plants yielded three-fourths pound of seed. Average per plant 42 grams; 530 seeds per gram.

27257. *Argentine.* Grown from S. P. I. No. 12549. Source of parent seed, Buenos Aires, Argentina (imported in 1905). One plant yielded 56 grams of seed; 567 seeds per gram.

"In making comparison as to yield of seed careful notice must be taken of the number of plants from which the yield was obtained. A large number indicates a thicker stand in the rows, hence less opportunity for full development. Fair comparisons may be made in most cases between strains represented by approximately the same number of plants."

27258 and 27259. MEDICAGO SATIVA L.**Alfalfa.**

27258. Commercial sand lucern. Grown from potted plants of S. P. I. No. 25110, which were started in the greenhouse at Washington and sent to Dickinson, N. Dak. Original seed received from Zurich, Switzerland. Fifty-five plants yielded $2\frac{3}{8}$ pounds of seed, an average yield per plant of 20 grams.

NOTE.—This number and Nos. 27261 and 27262 below were not grown from seed produced at Zurich, but from samples that were submitted by seedsmen of Darmstadt, Germany, to the seed-control station for test.

27259. Grown from P. L. H. No. 3411, which is inbred *Grimm* alfalfa produced in 1908 at Dickinson, N. Dak., by a selected plant from the same parent seed as P. L. H. No. 3235 (see No. 27201 above). Present sample grown in 1909. Sixteen plants yielded 1 pound of seed, an average yield per plant of 29 grams. Mr. Waldron reports that the winter of 1909–10 killed a much larger percentage of this inbred strain than the open-pollinated *Grimm* included in various experiments. Whether this killing was due to deterioration or whether the selected parent happened to be a nonhardy one can not be said, but it suggests an interesting experiment.

27260. MEDICAGO SATIVA VARIA (Mart.) Urb.**Sand lucern.**

Grown from P. L. H. No. 3386, which is true sand lucern produced by S. P. I. No. 20571, obtained by Prof. N. E. Hansen from Ultuna, Sweden. Forty-nine plants yielded $2\frac{1}{2}$ pounds of seed, an average per plant of 23 grams.

27261 to 27266. MEDICAGO SATIVA L.**Alfalfa.**

27261. *Commercial sand lucern.* Grown at Dickinson, N. Dak., from S. P. I. No. 25111 (see No. 27258 above). Fifty-two plants yielded $1\frac{3}{8}$ pounds of seed, an average per plant of 12 grams.

27262. *Commercial sand lucern.* Grown at Dickinson, N. Dak., from S. P. I. No. 25112 (see No. 27258). Fifty-five plants yielded $2\frac{1}{2}$ pounds of seed, an average per plant of 21 grams.

27263. Seed from volunteer plants that have persisted for several years on the site of an old experimental plat that was possibly *Grimm*.

27201 to 27288—Continued.**27261 to 27266—Continued.**

27264. Utah alfalfa seed from transplanted plants mixed with seed of the volunteer plants mentioned under No. 27263.

27265. Utah alfalfa seed produced by plants of S. P. I. No. 12784, which has been transplanted at definite distances in a study of the soil-moisture requirements of stands of different thickness.

27266. *Grimm* alfalfa grown in cultivated rows 3 feet apart (plat 16). From seed produced by Mr. Gustav Rasche of Westbrook, Cottonwood Co., Minn. The seed used on plat 16 was produced in the thirteenth year from seeding, from seed obtained by Mr. Rasche near Waconia, Carver Co., Minn. (see No. 27481). A $\frac{1}{16}$ -acre plat yielded at the rate of $5\frac{6}{10}$ bushels per acre.

27267. MEDICAGO RUTHENICA (L.) Trautv.

Seed collected in the first or seeding year from a $\frac{1}{4}$ -acre plat (in cultivated rows) of Hansen's introduction of this species, S. P. I. No. 24451, from Charonte, Siberia.

27268. MEDICAGO FALCATA L.

Seed collected in the first or seeding year from a $\frac{1}{4}$ -acre plat (in cultivated rows) of Hansen's introduction No. 24452, from Ob, Tomsk Province, Siberia. Photographs of the plats which produced this and the preceding number may be found in the second annual report of the Dickinson substation for 1909.

27269 to 27287. MEDICAGO SATIVA L.**Alfalfa.**

Seed from individual plants that were inclosed in wire cages to prevent cross-fertilization and were hand pollinated from time to time while in blossom:

27269. *Mongolian.* An individual plant of P. L. H. No. 2125 (see No. 27207 above). One plant yielded $1\frac{1}{4}$ grams of seed.

NOTE.—Inasmuch as covering with wire cages reduces materially the yield of seed, plants that have been caged and hand pollinated must not be considered typical of what these plants would do under normal conditions.

27270. *Mongolian.* An individual plant of P. L. H. No. 2125 (see No. 27207). This plant yielded $8\frac{3}{4}$ grams of seed.

27271 to 27273. *Turkestan.* Individual plants of S. P. I. No. 9453 (see No. 27213). The first yielded $3\frac{1}{4}$ grams of seed; the second $9\frac{3}{4}$ grams; the third 11 grams.

27274. *Turkestan.* An individual plant of No. 13999 (see No. 27252). One plant produced $4\frac{1}{4}$ grams of seed.

27275 to 27277. *Acclimatized Turkestan.* Grown from P. L. H. No. 3252 South Dakota No. 240 (see No. 27203). The first plant yielded $2\frac{3}{4}$ grams of seed; the second plant 1 gram; the third plant $3\frac{3}{4}$ grams.

27278. Grown from an individual plant of *Canadian* alfalfa, No. 13436, which yielded $3\frac{3}{4}$ grams of seed. (See No. 27208.)

27279. *Mexican.* Grown from an individual plant of No. 11652, which produced $35\frac{3}{4}$ grams of seed (See No. 27227.)

27280 and 27281. *Minnesota Grimm.* Grown from No. 21938 (see No. 27202). The first plant yielded $25\frac{1}{4}$ grams of seed; the second $25\frac{1}{2}$ grams.

27201 to 27288—Continued.**27269 to 27287—Continued.**

27282 to 27284. North Dakota *Grimm*. Grown from P. L. H. No. 3235, which is identical with S. P. I. No. 13358. The first plant yielded $9\frac{3}{4}$ grams of seed; the second $12\frac{1}{4}$ grams; the third 14 grams. (See No. 27201.)

27285. *Commercial sand lucern*. Grown from an individual plant of No. 21217, from Darmstadt, Germany, which yielded $18\frac{1}{4}$ grams of seed. (See No. 27216.)

27286. Origin of parent seed unknown. One plant yielded 4 grams of seed.

27287. Origin of parent seed unknown. One plant yielded $5\frac{1}{2}$ grams of seed.

NOTE.—The two preceding numbers are believed to be transplanted plants of *Peruvian alfalfa* No. 9303, which survived an earlier experiment.

27288. *MEDICAGO SATIVA VARIA* (Mart.) Urb.

Sand lucern.

Grown from cuttings of No. 20571 (see No. 27260). Nineteen plants yielded $1\frac{1}{2}$ pounds of seed. Average per plant 21 grams.

27289 to 27296.

From Bremen, Germany. Presented by Dr. Geo. Bitter, director, Botanical Garden. Received March 4, 1910.

Seeds of the following:

27289. *AGROPYRON SEMICOSTATUM* Nees.

Distribution.—Slopes of the Himalayas at an elevation of 6,000 to 12,000 feet, between Kashmir and Sikkim, India, and extending to Afghanistan and Turkestan.

27290. *ELEUSINE TRISTACHYA* Lam.

Distribution.—In the vicinity of Montevideo, Uruguay, and in Argentina, South America; introduced in the Azores, and in Spain and Italy.

27291. *MELILOTUS SUAVEOLENS* Ledeb.

27292. *MELILOTUS WOLGICA* Poir.

Distribution.—The southern part of Russia in the valley of the Volga River and the vicinity of the Caspian Sea.

27293. *PHLEUM JAPONICUM* Franch. & Sav.

Distribution.—Along sandy shores in the vicinity of Yokosuka, Japan.

27294. *TRIGONELLA CALLICERAS* Fisch.

Distribution.—The provinces around the Caspian Sea and in the Caucasus Mountains, southeastern Russia.

27295. *TRIGONELLA CRETICA* Boiss.

See No. 27148 for distribution of this species.

27296. *TRIGONELLA GLADIATA* Stev.

Distribution.—The countries bordering on the Mediterranean from Spain and France through Dalmatia and Greece eastward to Asia Minor, and in northern Africa.

27297 and 27298. COLOCASIA sp.**Dasheen.**

From China. Presented by Mr. Geo. Campbell, Kia-ying chau, China. Received March 29, 1910.

Tubers of the following; notes by Mr. Campbell:

27297. "Chinese name *Pak ho*, meaning white water lily. This should be planted anywhere from the end of the first month of the Chinese calendar to the second month (February). Take each tuber and cut off about a third of the root end before planting (this third is the perquisite of the hogs). It will do well in either loam or clay soil if one only gives it plenty of human urine by way of manure. '(The Chinese attach the greatest value to urine as manure but always dilute it freely before applying.)'"
The sprouts of these are white.

27298. "Chinese name *Chong chu*. It is named, I suppose, after the great city of Changchow fu, west of Amoy. The directions for planting this are the same as for the above (S. P. I. No. 27297), save that the time of planting corresponds to about the last week in January and first week in February." The tips of the sprouts of these are pink.

27299 and 27300. CITRULLUS VULGARIS Schrad.**Watermelon.**

From Hockanum, Conn. Presented by Mr. N. H. Brewer. Received March, 1910.

Princess Marie. Seed grown from S. P. I. No. 22657:

27299. "Dark seeds from melons whose flesh was a gray white and not as sweet as the yellow (S. P. I. No. 27300)." (*Brewer.*)

27300. "White seeds from a yellow-fleshed melon which was very sweet." (*Brewer.*)

In size these were larger than described, "being oblong like an ice-cream melon." (*Brewer.*)

27301. ROSA GIGANTEA Collett.**Rose.**

From Oporto, Portugal. Presented by Baron de Soutellinho, 115 Entre Quintas, who procured his original plants from the Royal Botanic Gardens, Kew, England. Received March 29, 1910.

"It is now twenty-five years since Dr. (now Sir George) Watt discovered this king of wild roses in Manipur (India), and nineteen years since the late Sir Henry Collett sent seeds of it to Kew.

"Here is an account of it by Mr. Hildebrand, who knew and grew the rose in Burma; indeed, I believe he helped Sir Henry Collett to get it home to England: '*Rosa gigantea* grows in profusion immediately opposite the window I am now writing at, and for 100 yards or more away. The boles of some of the plants are as thick as a man's thigh. It is a creeper, and does not flower until it gets over or beyond the tree it climbs. These specimens are on large evergreen trees, and their roots are in limestone and vegetable mold, through which run innumerable springs of pure water. The boles never get the sun, and they are always in the neighborhood of the water, which, no doubt, the roots find. The whole of a large group of trees on the southern and western side is covered up to 50 or 80 feet with the rose's shoots, and when in full bloom they look like a sheet of white, and the air all round is most deliciously scented. It is certainly a glorious sight. The ground all round is strewn with the seeds of the rose in July.''" (*Extract from The Garden, February 9, 1907, p. 67.*)

27302 to 27304.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, March 25, 1910.

27302. AMYGDALUS FENZLIANA (Fritsch) Korsh.

From Tiflis, Caucasus, Russia. "(No. 472, March 7, 1910.) A shrubby ornamental almond, flowering in early spring, with white flowers; growing in semiarid sections in eastern Caucasus. Suggested as a stock for almonds and other stone fruits in mild-wintered, semiarid sections, also of value, possibly, in breeding a bushy, drought-resistant strain of almonds for semiarid regions. Obtained from the Tiflis Botanical Garden." (Meyer.) (Plants.)

Distribution.—Arid mountain slopes of the transcaucasian provinces of Russia, at Phalernum in Greece, and on the islands of Crete and Sicily.

27303. PRUNUS MICROCARPA Meyer.

From Tiflis, Caucasus, Russia. "(No. 473, March 7, 1910.) A shrubby, small-fruited cherry, flowering early in spring. Coming from the semiarid sections of southeastern Caucasus. To be tested as an ornamental flowering shrub and perhaps also as a stock for stone fruits in the semiarid sections of the United States. Obtained from the Tiflis Botanical Garden." (Meyer.) (Plants.)

Distribution.—The slopes of the Beshbarmak Mountains near the Caspian Sea, and in the province of Astrabad, northwestern Persia.

27304. COLCHICUM SPECIOSUM Stev.

From Tiflis, Caucasus, Russia. "(No. 474, March 7, 1910.) A bulbous plant, flowering in autumn with large showy flowers of dark rose color. The strong foliage appears in spring, but dies off in midsummer and after some weeks of rest the flowers appear. It likes semishady places. Of value as an ornamental garden plant in the mild-wintered sections of the United States. Obtained from the Tiflis Botanical Garden." (Meyer.) (Bulbs.)

Distribution.—On the slopes of the Caucasus Mountains in southeastern Russia, and in northern Persia. Generally cultivated as an ornamental.

27305 to 27309.

From Paris, France. Presented by Mr. Maurice L. de Vilmorin, 13 Quai d'Orsay. Received March 25, 1910.

Plants of the following:

27305. BERBERIS SINENSIS Desf.

"(Vilm. No. 4456.)"

Distribution.—The Provinces of Chihli, Shingking, and Kansu in China; near Laoling, Korea; and in Japan.

27306. BERBERIS sp.

"(Vilm. No. 3927.)"

27307. BERBERIS SANGUINEA Franch.

See No. 25942 for previous introduction.

27308. CLEMATIS DELAVAYI Franch.

Distribution.—On mountain slopes in the Province of Yunnan in southern China.

27309. ROSA SERICEA Lindl.

Variety *fructu rubro*.

27310. AMYGDALUS DAVIDIANA (Carr.) Beiss., Sch. and Zab.**Wild peach.**

From Tientsin, China. Presented by Captain Tsao, through Mr. Yung Kwai, first secretary of the Chinese Embassy in Washington, D. C. Received March 30, 1910.

"Mr. Yung Kwai informs us that these seeds were collected by Captain Tsao from a wild tree in the neighborhood of his plantation at Tientsin, China. Captain Tsao informed Mr. Yung Kwai that this wild peach is the form upon which are grafted all the ordinary varieties of peaches around Tientsin." (*Fairchild.*)

See No. 22009 for other description.

27311. GARCINIA sp.

From Lawang, Java. Presented by Mr. M. Buysman. Received March 25, 1910.

27312 to 27320. RUBUS FRUTICOSUS L.**Blackberry.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile. Received March 26, 1910.

Seeds of the following:

27312 to 27315. "Round varieties of wild blackberries. These show slight differences; all are good fruits and are extremely productive. The plants are of the excessive-growth class." (*Husbands.*)

27316 to 27320. "Wild blackberries from near the seacoast, grown dry in the driest part of central Chile, still sufficiently near the sea to receive some benefit from the heavy marine dews. The plant growth is small, conical in form. The fruits are large (for wild fruits), fleshy, round sorts of extremely fine flavors and extra sweet. These are equally productive to any and some are even greater yielders." (*Husbands.*)

27321 to 27332. ORYZA SATIVA L.**Rice.**

From Philippine Islands. Received through Mr. Wm. S. Lyon, Manila. Received March 24 and 25, 1910.

Seeds of the following; native names as given by Mr. Lyon:

27321. *Kiabo.* Glutinous, remarkably fragrant.

27322. *Malakit-dure.* Black rice, but most prolific known, always estimated 100 to 1 and up.

27323. *Tuguis.*

27324. *Macan-pulat.* Late variety.

27325. *Quinalibo-Quinamalig.*

27326. *Guering-guering*, or properly *Kering-kering.*

27327. *Eputebem.*

27328. *Mimis.*

27329. *Calibo*; not *Calebo.*

27330. *Milagrosa.*

27331. *Macan.* Very early variety.

27332. *Macan Mimi.* Specifically meaning exceptionally white.

27333 and 27334. ORYZA SATIVA L.**Rice.**

From Cairo, Egypt. Presented by Mr. George P. Foaden, secretary, Khedivial Agricultural Society. Received March 31, 1910.

Seeds of the following:

27333. *Sultani*, known as *Ein el Bint*.

27334. *Sabeini*.

27335 to 27343.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, March 31, 1910.

Seeds of the following:

27335. *GLEDITSIA CASPICA* Desf.

From Tiflis, Caucasus, Russia. "(No. 1264a, March 7, 1910.) A honey locust growing into a rather spreading, densely branched, low tree, bearing a multitude of heavy, fleshy pods. Of value as a shade and park tree in the semiarid regions of the United States. Obtained from the Tiflis Botanical Garden." (*Meyer*.)

27336. *AMYGDALUS FENZLIANA* (Fritsch) Korsh.

From Tiflis, Caucasus, Russia. "(No. 12653, March 7, 1910.) For detailed description see No. 472 (S. P. I. No. 27302). Obtained from the Tiflis Botanical Garden." (*Meyer*.)

27337. *PRUNUS MICROCARPA* Meyer.

From Tiflis, Caucasus, Russia. "(No. 1266a, March 7, 1910.) For detailed description see No. 473 (S. P. I. No. 27303). Obtained from the Tiflis Botanical Garden." (*Meyer*.)

27338. *COLCHICUM SPECIOSUM* Stev.

From Tiflis, Caucasus, Russia. "(No. 1267a, March 7, 1910.) For detailed description see No. 474 (S. P. I. No. 27304). Obtained from the Tiflis Botanical Garden." (*Meyer*.)

27339. *CRATAEGUS* sp.

From Sukhum-Kale, Caucasus, Russia. "(No. 1268a, February 14, 1910.) An evergreen ornamental hawthorn, probably a form of *C. pyracantha*. Of strong-growing habits, but somewhat irregular growth. Of value as an ornamental evergreen in the mild-wintered sections of the United States. Obtained from the Botanical Garden at Sukhum." (*Meyer*.)

27340. *CITRULLUS VULGARIS* Schrad.

Watermelon.

From near Kopetnari, Caucasus, Russia. "(No. 1269a, March 1, 1910.) A native Mingrelian variety of watermelon, having red flesh and said to be very sweet. To be tested in California or the southern Rocky Mountain region, where the climate approaches that of this section of the Caucasus." (*Meyer*.)

27341. *CUCUMIS MELO* L.

Muskmelon.

From near Kopetnari, Caucasus, Russia. "(No. 1270a, March 1, 1910.) A native Mingrelian variety of muskmelon of small size, but said to be very sweet. To be tried in similar regions as the preceding numbers." (*Meyer*.)

27342. *INODES* sp.

From Sukhum-Kale, Caucasus, Russia. "(No. 1271a, February 11, 1910.) A low-growing palm, suitable for planting along driveways, paths in orchards, or in places where tall palms are not wanted. This palm does not form a real trunk, but has its leaves come from a rosette. Obtained from Mr. Smitskoi's place near Sukhum, where the climate is mild enough to grow oranges and other citrus fruits." (*Meyer*.)

27335 to 27343—Continued.

27343. *MEDICAGO HISPIDA DENTICULATA* (Willd.) Urban. **Bur clover.**

From Sukhum-Kale, Caucasus, Russia. "(No. 1272a, February 12, 1910.) An annual bur clover, found growing along an embankment. For remarks as to probable uses see No. 1201a (S. P. I. No. 26673)." (*Meyer.*)

NOTE.—For other species picked out of this lot see No. 27675.

27344 to 27360.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, March 31, 1910.

Cuttings, unless otherwise noted, were received of the following:

27344. *CORYLUS MAXIMA* Miller. **Filbert.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 430, February 10, 1910.) A filbert bearing the name *Badem fondook*, a native of the Caucasus. Much grown for its fine, oblong nuts, which find a ready sale. Obtained from the experimental station near Sukhum. Suitable for the Gulf region and the southeastern sections of the United States." (*Meyer.*) (Plants and cuttings.)

Distribution.—Southern Europe, extending from the Istrian peninsula of Austria eastward to Macedonia.

27345. *CORYLUS AVELLANA* L. **Hazelnut.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 431, February 10, 1910.) A hazelnut bearing the name *Zaksky fondook*, a native of the Caucasus. Nuts medium sized. See No. 430 (S. P. I. No. 27344) for source and regions to which it will be best adapted." (*Meyer.*) (Plants and cuttings.)

27346. *CORYLUS AVELLANA* L. **Hazelnut.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 432, February 10, 1910.) A hazelnut bearing the name *Trapezond fondook*, a native of the Caucasus. Nuts very large and generally well filled. The most widely grown variety here in the Caucasus. See No. 430 (S. P. I. No. 27344) for source and regions to which it will be best adapted." (*Meyer.*)

27347. *CORYLUS AVELLANA* L. **Hazelnut.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 433, February 10, 1910.) A hazelnut bearing the name *Kerasund fondook*, a native of the Caucasus. Nuts medium sized. See No. 430 (S. P. I. No. 27344) for source and regions to which it will be best adapted." (*Meyer.*) (Plants and cuttings.)

27348. *CORYLUS AVELLANA* L. **Hazelnut.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 434, February 10, 1910.) A native hazelnut of the Caucasus, called *Basset*. It bears medium-sized nuts. See No. 430 (S. P. I. No. 27344) for source and regions to which it will be best adapted." (*Meyer.*)

27349. *VITIS VINIFERA* L. **Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 441, February 15, 1910.) *Aturk ash* (translated Turkish grape). This produces medium-sized clusters of white grapes which ripen late in the season and are suitable for table use as well as for wine. A strong grower; has to be pruned with long wood, like all Caucasian grapes, to insure good harvests. Obtained from the vineyard of Mr. Smitskoi, near Sukhum." (*Meyer.*)

27350. *VITIS VINIFERA* L. **Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 442, February 15, 1910.) *Ash Khuta*. This produces a medium-sized bunch of whitish-colored berries,

27344 to 27360—Continued.

which are rosy when fully ripe, and have soft, juicy flesh; they are not very good as a table grape, but fine for wine production. A strong grower; has to be pruned with long wood to insure good crops. Obtained from the same source as the preceding number (S. P. I. No. 27349)." (*Meyer.*)

27351. VITIS VINIFERA L.**Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 443, February 15, 1910.) *Agra Ash.* A grape of dark-red color which produces a very dark-red wine. Not fit for table use, only a wine producer. Of medium-strong growth; has to be pruned with long wood to insure good crops. Obtained from the same source as No. 441 (S. P. I. No. 27349)." (*Meyer.*)

27352. VITIS VINIFERA L.**Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 444, February 15, 1910.) *Achgau.* A grape of dark-purple color, ripening late. Good for wine production. Very long internodes. Has to be pruned with long wood to insure good crops. Obtained from the same source as No. 441 (S. P. I. No. 27349)." (*Meyer.*)

27353. VITIS VINIFERA L.**Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 445, February 15, 1910.) *Achkiek.* A grape of bluish-red color, long, oblong berries, late ripener, and a fine table variety. A strong grower, making very long twigs; to be pruned with long wood to insure good crops. Obtained from the same source as No. 441 (S. P. I. No. 27349)." (*Meyer.*)

27354. VITIS VINIFERA L.**Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 446, February 15, 1910.) *Kachich.* A grape of blue-black color, late in ripening, only fit for wine making. A strong grower, making long twigs; should be pruned long to insure good crops. Obtained from the same source as No. 441 (S. P. I. No. 27349)." (*Meyer.*)

27355. VITIS VINIFERA L.**Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 447, February 15, 1910.) *Amlachu.* A grape of light-red color, late in ripening. Produces a rather good wine, not a table variety. Of medium-strong growth. As to pruning and locality where obtained see No. 441 (S. P. I. No. 27349)." (*Meyer.*)

27356. VITIS VINIFERA L.**Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 448, February 15, 1910.) *Awasarghua.* A fine table grape of Caucasian origin, medium-sized bunches, rather small berries, white in color, hard fleshed, of sweet taste. A very late ripener (end of November, beginning of December). A medium-strong grower; should be pruned with long wood to insure good crops. Obtained from the same source as No. 441 (S. P. I. No. 27349). This grape also produces a good wine." (*Meyer.*)

27357. VITIS VINIFERA L.**Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 449, February 15, 1910.) A native Caucasian grape, coming originally from Derbent (Caucasus). Producing heavy bunches of round berries, large size and of white color; taste, not very sweet, but offset by extraordinarily long-keeping qualities. Considered a fine table grape, especially good for shipping. A strong grower; has to be pruned with long wood to insure good crops. Native name of this grape *Agadai.* From the same locality as No. 441 (S. P. I. No. 27349)." (*Meyer.*)

27344 to 27360—Continued.**27358. VITIS VINIFERA L.****Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 450, February 15, 1910.) *Schachisum*. A native Caucasian grape, coming originally from Derbent. Considered a fine table grape; berries long, finger-shaped, with hard flesh; color whitish, but rose when fully ripe; very late in ripening, not very sweet, but having excellent keeping qualities, a good grape for shipping. To be pruned with long wood to insure good crops. Obtained from the same source as No. 441 (S. P. I. No. 27349)." (*Meyer*.)

27359. VITIS VINIFERA L.**Grape.**

From near Sukhum-Kale, Caucasus, Russia. "(No. 451, February 15, 1910.) *Achisum*. A Turkish table grape, having round berries of a white color, somewhat striped, sweet taste, hard flesh, and good keeping and shipping qualities. Obtained from the same source as No. 441 (S. P. I. No. 27349)." (*Meyer*.)

27360. LAUROCERASUS OFFICINALIS Roem.**Laurel cherry.**

From Dioscuria, near Sukhum-Kale, Caucasus, Russia. "(No. 453, February 16, 1910.) A very handsome variety of the laurel cherry, having very dense, glossy foliage. Comes from the high mountains of the Caucasus, and is able to stand 20° Reaumur below zero (−13° F.) For this reason it is suitable for regions where heretofore we have been unable to grow this handsome evergreen. Obtained through Mr. E. H. Albrecht, head gardener of the estates Sings and Dioscuria, near Sukhum." (*Meyer*.)

Distribution.—In the woods on the lower slopes of the mountains in Greece, in the transcaucasian provinces of Russia, and in the northern part of Persia.

27361. DYSOXYLUM sp.

From Buitenzorg, Java. Procured by Mr. A. J. Perkins. Received March 11, 1910.

Seed of a forest tree.

27362 and 27363. VITIS VINIFERA L.**Grape.**

From Almeria, Spain. Procured by Mr. Edward J. Norton, American consul, Malaga, Spain. Received March 31, 1910.

Cuttings of the following:

27362. *Ohanez*. Procured for growing in California in order to determine definitely whether what is now grown quite extensively there as the *Ohanez* is in reality this variety.

27363. *Castiza* or black grape and *Castiza especial*.

NOTE.—The letter received from the consul on April 11, 1910, discloses the fact that there were two varieties in this lot; as there was no way of distinguishing this at the time, they were given the one number and distributed; it will be impossible to distinguish them now until the vines fruit, at which time they will be separated and given different numbers.

"*Ohanez* grape, synonym *Casta de Ohanez* or *Uva de Lonja*. Though several different grapes are met with near Almeria, this is by far the most important one, and the extraordinary carrying and keeping qualities of its fruit has led to the establishment of the shipping industry for which Almerias are now so well known. Some confusion seems to exist as to this variety, various varieties being sometimes called Almeria which have nothing in common with the true *Ohanez*. It will need to be grown in the warmer localities of the *Vinifera* regions as it is a very late grape and would not ripen in the cooler sections. As the fertile buds

27362 and 27363—Continued.

are located some distance from the base of the canes it will require long pruning. Usually the vines are pruned to several long canes, with occasional spurs to enable keeping the shape of the vine. The variety is only partly self-fertile and artificial fertilization is therefore necessary. A wild staminate *Vinifera* known as *Flor* has been largely grown with it to supply the deficiency of pollen. Another table variety known as *Castiza* having red grapes is also used as a pollinizer. Bees are scarce in the Almerian parras owing to the absence of flowering plants. No doubt bees would greatly assist in the pollenization." (*Geo. C. Husmann.*)

27364 to 27399.

From Dickinson, N. Dak. Grown under the supervision of Mr. Charles J. Brand in collaboration with Prof. L. R. Waldron at Dickinson during the season of 1909. Seed from cuttings and seed from various sources grown in pots in the Department greenhouse at Washington and sent to the experimental substation at Dickinson.

Seed of the following; notes by Mr. Charles J. Brand:

27364. MEDICAGO SATIVA L.**Alfalfa.**

Seed from cuttings of a woody, semiupright plant with dusky-purple flowers and small, obovate leaves. Dickinson seed produced from cuttings of a plant grown at Lanham, Md., from seed received under this name from the Botanical Gardens, Madrid, Spain. Two plants yielded 3 ounces of seed.

27365. MEDICAGO SATIVA L.**Alfalfa.**

Dickinson seed from cuttings of a plant grown at Lanham, Md., from seed secured from the Botanical Gardens, Madrid, Spain. The parent plant had small, loose pods coiled from one to two turns, few flowers in the head, and those of lavender color. Six plants yielded 4 ounces of seed.

27366. MEDICAGO SATIVA VARIA (Mart.) Urban.**Sand lucern.**

Grown from seed taken from a coiled pod having three turns, found on a plant of No. 20571, normally bearing sickle-shaped pods and variegated flowers. Progeny from seed of sickle-shaped pods of this same plant is represented by No. 27370, below. Four plants yielded 3 ounces of seed.

27367. MEDICAGO SATIVA L.**Alfalfa.**

Produced at Dickinson from seed of a plant grown at Lanham, Md., from seed secured from the Botanical Gardens of Madrid, Spain. Four plants yielded 7 ounces of seed.

27368 and 27369. MEDICAGO SATIVA L.**Alfalfa.**

27368. Mielga. Grown from a plant of wild alfalfa secured by Mr. M. Fraile, of the Bureau of Plant Industry, near Salamanca, Spain. This plant was grown in the department greenhouse at Washington and sent by mail to Dickinson. One plant yielded 1 ounce of seed. (The name "Mielga" is never applied to cultivated alfalfa).

27369. Grown at Dickinson from cuttings obtained at Lanham, Md. Original seed from Botanical Gardens, Madrid, Spain.

27370. MEDICAGO SATIVA VARIA (Mart.) Urban.**Sand lucern.**

Grown from seed of a sickle-shaped pod taken from an individual plant of No. 20571, which came from Ultuna, Sweden. The mother plant normally bore sickle-shaped pods. The progeny of a coiled pod of the same plant is listed under No. 27366. The mother plant had variegated flowers showing the smoky yellow-violet combination of colors typical of true sand lucern.

27364 to 27399—Continued.**27371. MEDICAGO SATIVA L.****Alfalfa.**

Propagated from a few seed of wild alfalfa collected by Mr. M. Fraile, of the Bureau of Plant Industry, near Villamayor, Spain.

27372. MEDICAGO SATIVA L.**Alfalfa.**

Grown from cuttings secured at Lanham, Md. Original seed from Botanical Gardens, Madrid, Spain. Six plants yielded 7 ounces of seed.

27373 and 27374. MEDICAGO SATIVA VARIA (Mart.) Urban. Sand lucern.

27373. Produced from cuttings of a plant of No. 20571. The parent plant bore typically variegated flower heads, has small leaves, loosely coiled pods, with one-half to one and one-half turns, and very woody stems. Six plants yielded 3 ounces of seed.

27374. Seed from cuttings of a plant of No. 20571, which bore faded bluish-colored flowers with violet veins. Three plants yielded 4 ounces of seed.

27375. MEDICAGO FALCATA L.**Sickle lucern.**

Seed from cuttings of No. 20717, collected by Prof. N. E. Hansen near Khar-kof, Russia. The parent plant was low spreading and vigorous. Five plants grown from cuttings yielded 4 ounces of seed. The plants that produced the present seed were grown in close proximity to *M. sativa*, hence a *sativa* × *falcata* cross may have resulted.

27376 to 27378. MEDICAGO SATIVA L.**Alfalfa.**

27376. Seed produced from cuttings of a plant grown at Lanham, Md., from seed presented by the Botanical Gardens, Madrid, Spain. The parent plant was exceedingly vigorous and rapid of growth, upright in habit and produced unusually large leaves. Five plants yielded 5 ounces of seed.

27377. Mielga. Progeny of a wild alfalfa plant collected by Mr. M. Fraile, of the Bureau of Plant Industry, near Villares de la Reina, Spain. (See No. 23391.) Five plants yielded 3 ounces of seed.

27378. Seed grown from cuttings of two selected individuals that yielded 1 ounce of seed.

27379. MEDICAGO SATIVA L.**Alfalfa.**

Grown at Dickinson from cuttings of a plant produced at Lanham, Md. Original seed from Botanical Gardens, Madrid, Spain. Pods of good size, loosely coiled from one to three times; leaves small, flowers dusky purple. Three plants yielded 4 ounces of seed.

27380. MEDICAGO SATIVA L.**Alfalfa.**

Grown from S. P. I. No. 22949, which represents seed of the wild alfalfa plant collected by Mr. José D. Husbands near Limavida, Chile. Four plants yielded 4 ounces of seed.

27381. MEDICAGO SATIVA L.**Alfalfa.**

Grown from seed produced at Lanham, Md. Original seed from Botanical Gardens, Madrid, Spain. Parent plant was vigorous and woody, has small leaves and white flowers. It was grown in association with other species and varieties so that crossing may have occurred readily. Two plants yielded 4 ounces of seed at Dickinson.

27364 to 27399—Continued.**27382 to 27399.**

Seed from selected plants that were open pollinated:

27382 to 27384. *MEDICAGO SATIVA VARIA* (Mart.) Urban. **Sand lucern.**

27382 and 27383. Grown from cuttings of S. P. I. No. 20571 (see No. 27260, above). The first plant yielded $37\frac{1}{4}$ grams of seed; the second $25\frac{1}{4}$ grams.

27384. Grown from P. L. H. No. 3386, which represents seed of No. 20571. As both 3386 and the present lot were produced in association with ordinary alfalfa, unlimited opportunity for crossing existed. One plant yielded 36 grams of seed.

27385 to 27391. *MEDICAGO SATIVA* L. **Alfalfa.**

27385 and 27386. Grown from two plants of S. P. I. No. 25112 (see No. 27262, above). The first plant yielded 29 grams; the second 27 grams of seed.

27387. Grown from an individual plant of S. P. I. No. 25111 (see No. 27261). One plant yielded 42 grams of seed.

27388 to 27391. Grown from four selected plants of S. P. I. No. 25110 (see No. 27258). The first plant yielded 2 grams of seed; the second $44\frac{1}{2}$ grams; the third $19\frac{1}{2}$; the fourth .7 grams; showing admirably the great diversity in value as to seed production of the individuals composing the stand of alfalfa.

27392 and 27393.

NOTE.—When the material to which these numbers were assigned was thrashed, no seed was found, so they were not used.

27394. *MEDICAGO FALCATA* L. **Sickle lucern.**

Grown at Dickinson from cuttings of Hansen's introduction of this species No. 20721, from Samara, Russia. One plant yielded one-fourth gram of seed. As this was grown in association with true alfalfa the present number may represent the immediate hybrid between *sativa* and *falcata*—*Medicago sativa varia* (Mart.) Urban, or true sand lucern.

27395 to 27397. *MEDICAGO SATIVA* L. **Alfalfa.**

27395. Grown from a cutting which yielded 10 grams of seed.

27396. Grown from a cutting which yielded 17 grams of seed.

27397. Grown from seed of this species produced at Lanham, Md. Original seed from Madrid, Spain. Parent plant had loose, open pods, many of them broadly falcate. At Dickinson one plant yielded $36\frac{1}{4}$ grams of seed.

27398. *MEDICAGO SATIVA VARIA* (Mart.) Urban. **Sand lucern.**

Grown from cuttings of S. P. I. No. 20571 (see No. 27260). One plant yielded $46\frac{1}{2}$ grams of seed.

27399. *MEDICAGO SATIVA* L. **Alfalfa.**

Grown from seed produced at Lanham, Md. Original seed from Madrid, Spain. One plant yielded 9 grams of seed.

27400 to 27417.

From Paris, France. Presented by Mr. Maurice L. de Vilmorin. Received March 21, 1910.

Seeds of the following:

27400 and 27401. BERBERIS DICTYOPHYLLA Franch.

27400. Variety *albicaulis*.

27401. Variety *petiole rose*. (Vilm. No. 4.113.)

27402. BERBERIS HENRYANA Schneider (?).

Distribution.—Discovered in the Province of Hupeh, central China.

27403 and 27404. BERBERIS TIBETICA Hort. (?)

27403. (Vilm. No. 3.939.)

27404. (Vilm. No. 4.681.)

27405. BERBERIS YUNNANENSIS Franch.

Distribution.—On the mountains at an altitude of about 10,000 feet in the Province of Yunnan, southern China.

27406. BERBERIS sp.

(Vilm. No. 3.448.)

27407. COTONEASTER ADPRESSA Bois.

Distribution.—This species is reported from China without any definite locality. It was grown in the Vilmorin nurseries near Paris.

27408. CORYLUS FEROX TIBETICA (Bat.) Franch.

Distribution.—Along the banks of Tshagon River in the Province of Kansu, and in the Provinces of Hupeh, Shensi, and Szechwan, China.

27409. JUGLANS MANDSHURICA Maxim.

Distribution.—Among the mountains in the Provinces of Chihli, Hupeh, Szechwan, and Yunnan, in China, and in Manchuria and Amur, eastern Siberia.

27410. LONICERA SYRINGANTHA Maxim.

Distribution.—Known only from the Province of Kansu in northwestern China.

27411. PRUNUS CANESCENS Bois.

Distribution.—Known only from the Province of Szechwan in central China.

27412. PRUNUS MANDSHURICA (Maxim.) Koehne.

Distribution.—Southern Manchuria in the vicinity of Lake Khanka and along Sungari River.

27413. PRUNUS sp.

(Vilm. No. 1037.)

27414. ROSA SERICEA Lindl.

Variety *fructo luteo*.

27415. VITIS PAGNUCCI Rom.

Distribution.—The Provinces of Shensi and Hupeh in central China.

27416. VITIS TITANEA Ndn. (?)

27417. ZANTHOXYLUM CHENSI Hort. (?)

27418 to 27462.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, March 18, 1910.

Seeds of the following. Descriptive notes by Mr. Husbands:

27418. *ACACIA CAVENIA* (Mol.) Bert.

See No. 24309 for description.

27419. *BERBERIS CHILENSIS* Gill.

"*Michay*. A yellow-flowered, thorned, dark-leaved, evergreen bush about 6 feet high, suitable for live fences and ornament. The Indians eat the fruit."

27420. *CAESALPINIA BREVIFOLIA* (Clos) Baill.

"*Algarrobillo*. A wild bush from the dry rainless north, near Huasco. This is a valuable industrial plant, grown for its tannin, of which it has 40 per cent. It is also a beautiful flowering ornamental."

27421. *CEREUS QUISCO* Gay.

"*Guillaves*. A cactus which grows very tall and perfectly straight, with an extra-large, double, fragrant white flower and comestible fruit."

27422. *CUCURBITA* sp.

Squash.

"A field variety."

27423 to 27429. *FRAGARIA CHILOENSIS* (L.) Duchesne. **Strawberry.**

27423. "Light red, pink flesh, fine flavor, medium to large size, early."

27424. "Flesh pink outside and white inside, very sweet and fine flavored, short stems, prolific."

27425. "Fresh pink outside and white inside, very sweet and fine flavored, softens quickly, long stems, prolific."

27426. "Outside yellow; flesh white, extra firm; good keeper; lacks flavor and sweetness; extra large; prolific; short stems."

27427. "Light red or crimson tops with the bottom tip white; flesh pink near the outside, white center, good flavor."

27428. "White and pink, firm flesh, not much flavor; good shippers."

27429. "White inside and outside; extra-firm flesh; good shipper; less flavor than red varieties."

"The medium-sized red varieties are softer fleshed, sweeter, and better flavored than the white kinds; they do not keep long when picked, and must be used fresh. The large white and yellow classes have solid flesh, are good keepers and shippers. While they lack the exquisite flavor of American varieties, they are good eating and are highly esteemed as desirable sorts. The demand is largely in excess of the supply."

27430 and 27431. *HELIANTHUS ANNUUS* L.

Sunflower.

27430. "This variety flowers at every leaf, and afterwards flowers again."

27431. "This variety has 27 flowers on 1 stalk."

27432. *LAURELIA SEMPERVIRENS* (Ruiz and Pav.) Tul.

Laurel.

"From the island of Maucera, near Corral, the port of Valdivia."

27433 and 27434. *LITHREA CAUSTICA* (Mol.) Hook. and Arn.

27433. "From the dry inland coast country."

27434. From the Cordilleras.

27418 to 27462—Continued.

27435. *LOLIUM MULTIFLORUM* Lam.

Italian rye-grass.

"Probably Chile's best all-round wild pasture grass. May be classed as equal to timothy. Annual."

27436. *MAYTENUS MAGELLANICUS* (Lam.) Hook. f.

"*Maiten*."

27437. *MEDICAGO LUPULINA* L.

"*Gualputa*. A new sort from the highlands of the Cordilleras."

27438. *MEDICAGO SATIVA* L.

Alfalfa.

"Seed from a wild alfalfa plant found in the virgin forest of the inner Cordilleras at a high altitude."

27439. *MELILOTUS INDICA* (L.) All.

"A wild sweet clover, yellow flowered, highly esteemed for fodder; eaten by all animals."

27440. *NOTHOFAGUS* sp.

"White oak."

"A fine timber tree for any industrial use."

27441 to 27450. *RUBUS FRUTICOSUS* L.

Blackberry.

"The fruits of these are round, uniform size, from five-eighths to three-fourths of an inch in diameter; they are all sweet and good flavored, some especially so. All of them may be considered as early sorts. The later kinds are the same, except as to their fruiting time. The fruits are good and not overseeded, and have an abundance of sweet, agreeably flavored flesh and juice. In their wild state they would serve well for commercial and domestic uses if the people had learned to esteem them. The only objection is their excessive plant growth, for they are extra productive. The plant growth of all the strains is about equal; 15 feet would be an average height; they spread quickly, birds eat the fruit and sow the seeds, or if a tiny bit of root be left in the ground they soon thrive again under any conditions. They make an effective hedge or impassable barricade, but need annual pruning to keep them in their required place, or they will spread, fill irrigating canals, usurp adjoining land, and become a pest. The southern classes have less plant growth, different-shaped fruit, and smaller bunches, with flavors of their own. I consider the blackberries of the south as superior to those of central Chile (Nos. 27442, 27443, and 27446), but incomparably less productive. If by crossing you can obtain their flavors and great productiveness upon dwarf plants, you have made a progressive advance."

27451. *SPARTIUM JUNCEUM* L.

"*Retama*. A beautiful leafless bush or treelet, 6 to 8 feet high, with large, yellow, delightfully fragrant flowers, which remain in bloom a long time."

27452 and 27453. *SOLANUM* sp.

Potato.

27452. "From the far South."

27453. (No note.)

27454. *SOPHORA MACROCARPA* Smith.

"A beautiful tree, whose fruit is comestible."

27455. *STRYCHNOS* sp.

"A beautiful dwarf ornamental tree, from the innermost Cordilleras near the perpetual-snow line."

27456. *TRACHYCARPUS EXCELSUS* (Thumb.) Wendl.

"A dwarf palm, trunk covered with hair. For lawn decoration or garden."

27418 to 27462—Continued.**27457.** TRIFOLIUM PRATENSE L.

Red clover.

27458. TRITICUM DURUM Desf.

Wheat.

“A sample of black-bearded wheat found growing among other sorts.”

27459. (Undetermined.)

“*Guilli-Patagua* or *Naranjillo*. A splendid evergreen tree. When in flower the entire wood and branches are covered with blooms, which give the tree the appearance of being trimmed with yellow lace.”

27460. (Undetermined.)**27461.** (Undetermined.)

“A flowering forest tree that has yellow flowers.”

27462. (Undetermined.)

“*Alberjillas*.” Same remarks apply to this as to No 27455.

27463 to 27477. MELILOTUS spp.

From Madrid, Spain. Presented by the Madrid Botanical Garden. Received March 25, 1910.

Seeds of the following:

27463. MELILOTUS ALBA Desr.**27464 and 27465.** MELILOTUS DENTATA (Waldst. & Kit.) Pers.

Distribution.—Europe and western Asia, extending from Sweden and the British islands eastward through Russia, Servia, Roumania, and Asia Minor to Siberia and Turkestan.

27466 to 27468. MELILOTUS INDICA (L.) All.**27469.** MELILOTUS INDICA TOMMASINII (Jord.) Schultz.

Distribution.—The Sinai peninsula, Arabia.

27470. MELILOTUS ITALICA (L.) Lam.

Distribution.—Along the northern shore of the Mediterranean from southern France eastward through Italy, Corsica, Sardinia, Sicily, and Greece to Asia Minor.

27471. MELILOTUS MESSANENSIS (L.) All.

See No. 25213 for distribution of this species.

27472. MELILOTUS SPECIOSA Durieu.

Distribution.—Cool rocky slopes of the hills in the vicinity of Oran and La Calle, in Algeria, and also on the island of Mauritius.

27473. MELILOTUS SEGETALIS (Brot.) Ser.

Distribution.—The countries bordering on the Mediterranean from Spain and southern France, through Italy, Greece, and Asia Minor to Syria, and in North Africa.

27474. MELILOTUS SUAVEOLENS Ledeb.

Distribution.—Eastern Asia, extending from Siberia, Turkestan, and India eastward to Korea, China, and Japan.

27475 to 27477. MELILOTUS TAURICA (Bieb.) Ser.

Distribution.—Sterile mountain slopes in the Crimea, and in Asia Minor and Kurdistan.

27478 and 27479.

From Japan. Presented by the Japan Nursery Company (Ltd.), Settsu, Japan, at the request of Mr. Albert J. Perkins. Received March 29, 1910.

Seeds of the following:

27478. CITRUS sp.

Yuzu.

See No. 26568 for description.

27479. DIOSPYROS KAKI L. f.

Persimmon.

Mixed seed.

27480. PHYSALIS IXOCARPA Brot.

Husk-tomato.

From Chico, Cal. Grown at the Plant Introduction Garden from seed which was presented by Mr. Elmer Stearns, Ciudad Juarez, Chihuahua, Mexico. Received March 17, 1910.

"Fruit the size of an English walnut, without shuck. It is very extensively eaten in all parts of the Republic (meaning Mexico). Sow same as any tomato. Plants grow erect, 3 to 4 feet high." (*Stearns.*)

PUBLICATION OF NEW NAMES.

The following names are published in this issue:

26653. *CHAETECHLOA NIGRIROSTRIS* (Nees) Skeels.

27018. *EMPLEURUM UNICAPSULARIS* (L.) Skeels.

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U. S. DEPARTMENT OF AGRICULTURE,

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 208.

B. T. GALLOWAY, *Chief of Bureau.*

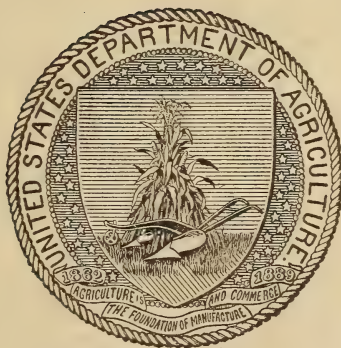
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DURING THE PERIOD FROM APRIL 1

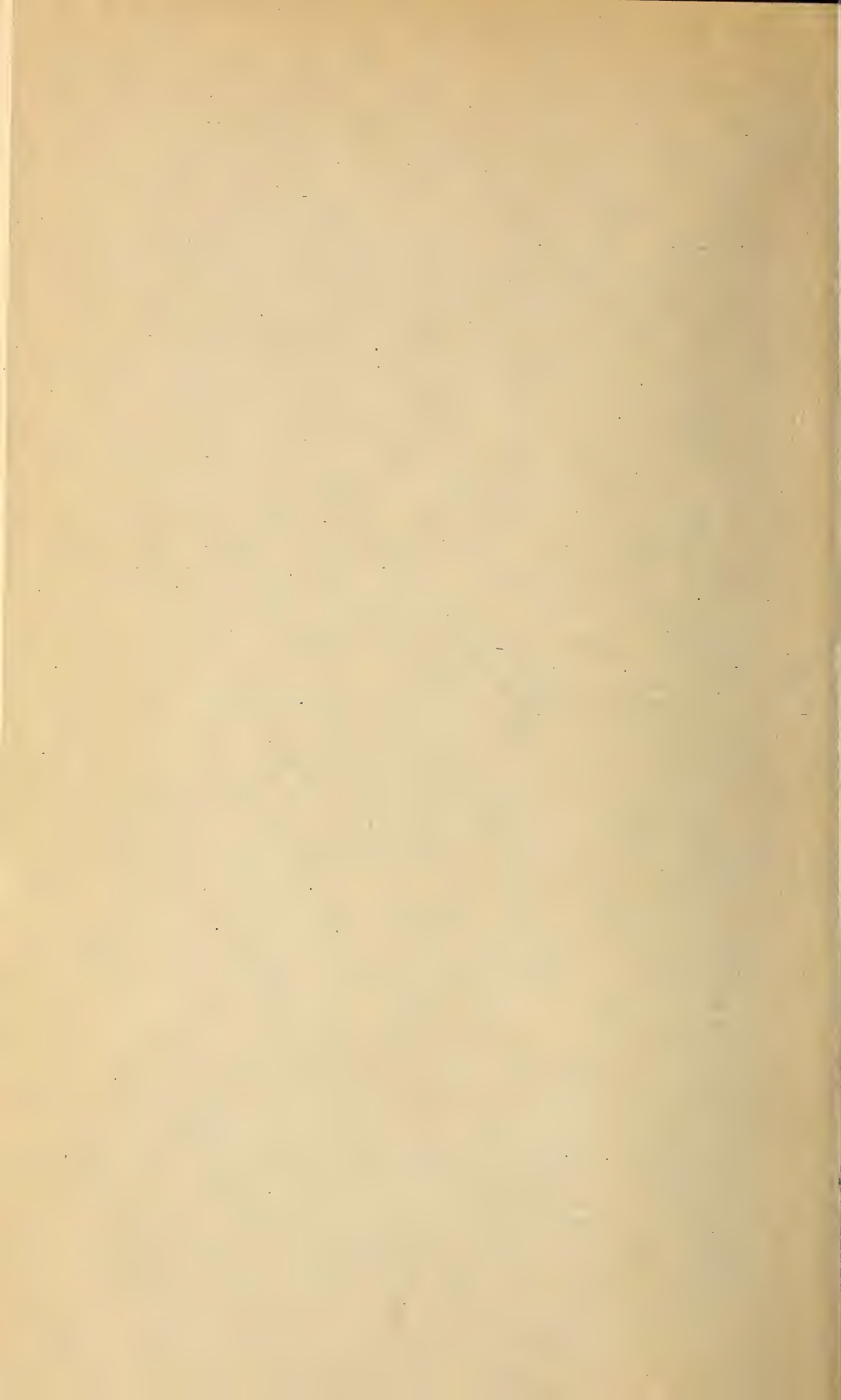
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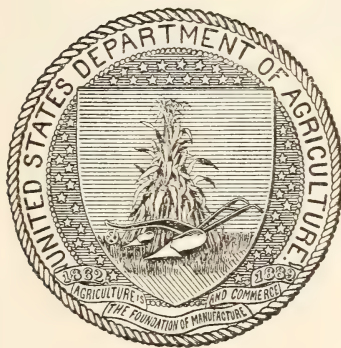
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BUREAU OF PLANT INDUSTRY.

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., January 5, 1911.

SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 208 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from April 1 to June 30, 1910: Inventory No. 23, Nos. 27481 to 28324."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

WM. A. TAYLOR,
Acting Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.



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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM APRIL 1 TO JUNE 30, 1910: INVENTORY NO. 23; NOS. 27481 TO 28324.

INTRODUCTORY STATEMENT.

This quarterly inventory, covering the period from April 1 to June 30, 1910, contains the collections of only one agricultural explorer in the field, Mr. Frank N. Meyer, whose collecting during this period was confined to the mountains of the Caucasus, where he went pending permission from the Russian authorities to enter Chinese Turkestan.

Among the 154 introductions which he found worthy of sending in are the Erivan alfalfa (No. 27980), which the agriculturists in that region have found to be longer lived than the Turkestan variety; a perennial *Medicago* with large leaves, growing at an altitude of 4,000 feet, which promises to be of use in breeding new strains of hardy alfalfa; a collection of hard-fleshed table grapes, some of which have unusual keeping and shipping qualities (Nos. 27538-27540 and 27620-27650); a dry-land Caucasian beech (No. 27662); scions from wild trees of a shrubby species of pear for use as a dwarfing stock (*Pyrus nivalis elaeagrifolia*, No. 27670); a collection of Caucasian peaches (Nos. 27614-27619); and scions of the true Paradise apple (*Malus pumila*, No. 27968) cut from wild trees, for experiments with the crown gall, which was found by Mr. Meyer very prevalent in the French nurseries of dwarfed apples from which importations are made to America.

Of the plants sent in by correspondents, those experimenting with the different materials used in paper making will be interested in the Japanese species *Abelmoschus manihot* (No. 27493), the mucilaginous juice of which is used by the paper makers of Japan as a size for their handmade papers. A new and delicious fruit introduction by Mr. Walter Fischer, of Para, which he thinks will live in the Everglades, is the *Rollinia* (No. 27579), which grows on the lowlands along the mouth of the Amazon and occurs in Paraguay (Nos. 27609 and 27797). The Korean chestnut (No. 27587) will be of interest to those who are hunting for resistant species which are immune to the chestnut-tree disease, which is doing such widespread damage. Forage-plant specialists of the New England States will probably wish to test

the three selected strains of Norwegian clover, the Molstad, Toten, and Hvinden's, from Roikenvik (Nos. 27600, 27601, and 27602). Fiber experts in Porto Rico, the Philippines, and Hawaii should have their attention called to the Furcraea, from Costa Rica (No. 27777), which is said to have a fiber that is whiter than sisal and is considered of enough importance to be planted on a large scale in Central America. The growing use, especially on the Pacific coast, of the winter muskmelon, or cassaba, makes the introduction of a series of these winter-ripening melons (Nos. 27779-27788) from the Greek islands of Zante and Cephalonia of interest to the melon growers of the Southwest. Although maraschino as a liqueur is well known to Americans, the cherry from which it is made, which is grown on a few small islands in the Adriatic, seems with this introduction to be brought for the first time into America (No. 27791). To those in the Philippines, Hawaii, and Porto Rico who are engaged in the cultivation of rubber trees the introduction of the *Sapium jenmani* of Demerara (No. 27873), from which one of the highest priced rubbers in the world is obtained, can not fail to be of interest. The paint manufacturers, it is learned, import large quantities of euphorbium rosin from Morocco for use in the manufacture of rustless coatings for steel structures, and the introduction of the seed of the euphorbiaceous plant (No. 27955) from the mountain slopes of that country may lead to the creation of a home supply of this material. Seeds have been obtained of the nan mu tree of the Yangtze Valley (No. 28128), which furnishes the most famous of Chinese woods, used in the building of the imperial palaces. As this tree is said to be in danger of extinction and as it will probably grow in our Southern States, the introduction of seeds of it at this time is of special importance. Since the introduction in 1853, from France, of the Chinese sorgo, there seems to have been no reintroduction of that particular strain until this year, when seed of this identical variety (No. 28024) was obtained by correspondence from Tsungming Island, at the mouth of the Yangtze.

Guava cultivation in Florida and Porto Rico for the production of guava jelly has reached a stage when the introduction of a close relative of the guava from Para (*Britoa acida*, No. 28061) will interest a considerable number of people because of its acid fruits. The call on the part of the California growers who supply table grapes to the eastern market for varieties that will better withstand shipment has become insistent and special efforts are being made to meet the demand. A collection of 13 varieties of table grapes from Servia is of interest in this connection (Nos. 27685-27697). For those breeders of the oriental and American persimmon who believe that the cultivation of this fruit plant can be developed into a great orchard industry, a search is being made after all the species of *Diospyros* which it is

thought can contribute to the production of better persimmons, and this inventory contains species from Mauritius, Bengal, the Caucasus, and Mexico.

The total number of introductions listed, 844, is an average of over 280 a month, or 10 introductions each official day, which is more than 16 per cent above the average for any previous period, notwithstanding the fact that only one explorer has been in the field during this time. This may be taken as an indication of the increase in requests from experimenters for new material and in foreign correspondence which leads to the discovery of valuable foreign plants not heretofore introduced.

Special attention is called to the increasing quantity of technical botanical matter included, particularly the geographic distribution of the rarer species. For this, as well as for the determination of the species, Mr. H. C. Skeels, working under the supervision of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations, is responsible. Miss Mary A. Austin, as heretofore, has had charge of the preparation of the inventory.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., December 17, 1910.

INVENTORY.

27481. *MEDICAGO SATIVA* L.

Alfalfa.

From Westbrook, Minn. Obtained from Mr. Gustave Rasche through Mr. Charles J. Brand. Received April 1, 1910.

"This sample of *Grimm* was produced in the fifteenth year from *Grimm* seed taken to Westbrook from Waconia, Carver County, in 1893. The seed crop of 1909 is the tenth taken from the original planting. Mr. Rasche originally seeded 1 acre, using 15 pounds of seed. In 15 years he has sold about 8 bushels of seed and increased his own acreage to 15. In the severe test at Dickinson, N. Dak., during the winter of 1908-9, this race, grown in rows 3 feet apart, proved to be one of the very hardiest." (*Brand.*)

27482. *JUGLANS NIGRA* L.

Black walnut.

From Fresno, Cal. Sent by Mr. George C. Roeding, at the request of Mr. William A. Taylor, to the Plant Introduction Garden, Chico, Cal. Received April 1, 1910.

"I would say that the 'Peanut' black walnut is not a hybrid form, but so far as can be determined is merely an unusual form of the native black walnut, *Juglans nigra*.

"The original tree is a seedling, now 70 or 80 years old, on the land of Mr. H. C. Kline, South Salem, Ohio. The attention of our Mr. W. N. Irwin was called to this tree some years ago by the fact that a large proportion, though not all, of the nuts were very slender and pyriform, quite unlike the usual form of the nut of this species. The kernels in these pyriform nuts are almost cylindrical, only one lobe of the kernel filling and maturing. It is not positively known whether these peculiarly formed nuts come from certain branches of the tree or not. The trees sent to Chico were propagated from scions cut from the original tree two years ago. I quote the following characterization of the variety from the report on nut culture published by the Division of Pomology, in 1896: '*Peanut* (pl. 7, fig. 2).—Received from Mr. W. N. Irwin, South Salem, Ohio. It is a rather small, pyriform nut. Its name was given because of the resemblance of its kernel to that of the peanut. The shell is thin and is easily cracked, while the kernel, which is in the larger end of the nut, comes out entire. The peculiar form is apparently due to some defect in the pistil, as but one side of the nut 'fills' and matures. A large proportion, though not all, of the fruit on the tree is of this form each year. The kernel is white and of delicate flavor.'" (*Taylor.*)

27483. *ANONA CHERIMOLA* Miller.

Cherimoya.

From Santa Barbara, Cal. Presented by Dr. F. Franceschi. Received April 6, 1910.

"Fruit from the first tree planted in Santa Barbara some 40 years ago. The fruit when received weighed 13½ ounces; its greatest diameter was 4½ inches, and its least diameter was 3½ inches." (*Franceschi and Dorsett.*)

27484. DIOSPYROS TUPRU Hamilton.

From Lal Bagh, Bangalore, Mysore, India. Presented by Mr. G. H. Krumbiegel, economic botanist, superintendent of the Government Botanic Gardens. Received April 18, 1910.

Distribution.—From the western Himalayas to the plains of Behar in the north-western part of India.

27485. RHEEDIA EDULIS (Seem.) Planch. and Triana. **Sastra.**

From the Province of Chiriqui, Panama. Procured by the provincial engineer, through Hon. Joseph E. Le Fevre, Secretary of Fomento, Panama City, at the request of Mr. H. F. Schultz. Received April 18, 1910.

"A shrublike tree producing an edible fruit, about 1 to 1½ inches in diameter, which the natives describe as a round berry. It has reddish, smooth skin and a pleasantly acid taste. It is not cultivated, but seems to be well known to the natives. I am informed that the fruit is produced in the dry season, January and February. The tree sends out a long tap root, and this fact discredits the statement made to me by natives that the tree is often found on dry places. 'Dry' places in this country are dry, there is no mistake about this, and if on wet locations, like those on which I found the only three trees I saw, it sends its long tap root down to where the ground is water-soaked every day in the year, it becomes very apparent that this long root is not given the tree in order to hold its own against 'northers' in exposed positions, but merely to go down to a perpetual supply of fresh water." (*Schultz.*)

Distribution.—In dense forests in the vicinity of Remedios, Province of Veragua, Panama. (Seeds.)

27486. CARICA PAPAYA L. **Papaya.**

From New Orleans, La. Presented by Mr. Sam Marshall, superintendent, Audubon Park. Received April 14, 1910.

"These fruits can be pulled as soon as they show a few yellow spots, and are house ripened. They are very much like a muskmelon, being eaten with salt and pepper. This seed was produced by seedling plants that are 2 years old. They are rapid growers, but will not stand any degree of frost. The fruit grows in clusters and is round to oblong in shape. I think they would stand transportation. Have been told they are often to be had in our 'French market'." (*Marshall.*)

27487 to 27489. SOLANUM sp. **Potato.**

From Reading, England. Presented by Messrs. Sutton & Sons. Received April 1, 1910.

Tubers of seed potatoes as follows:

27487. The Congo.

27489. Large red fir apple.

27488. Small white fir apple.

27490. BAMBOS ARUNDINACEA Retz. **Bamboo.**

From Cochín, British India. Presented by Mr. Jean Houzeau de Lehaie, St. Symphorien, Belgium. Received April 2, 1910.

"This species is easily propagated by cuttings by the method described by Rivière.

"Regarding the climatic conditions which it demands, I may say that it has only been sent to Algeria and to Sukhum-Kale, in the Caucasus. It seems to develop best at Sukhum-Kale, though it is colder there than at Algiers. Why, I have no idea. If I am not mistaken, the lowest temperatures met with at Sukhum-Kale are between -3° and -5° C.; temperatures taken with the thermometer sheltered.

27490—Continued.

"The *B. spinosa* (= *B. arundinacea*) grows (when it is vigorous) in the manner best adapted to protect its young stems from herbivora, Rivière says. The stems branch out from the base, and their spiny branches, overhanging to the ground, prevent animals from approaching the trunk and eating the tender young stems. This makes it difficult to establish hedges, for one has to spare the lateral branches from the base in order to protect the young shoots of the following year, and under these conditions transplantation is painful, or else it is necessary to protect the plants during their first years, which is not practicable." (*De Lehaie.*) (Seed.)

27491 and 27492. PUERARIA spp.

From Darjiling, Bengal, British India. Presented by Mr. G. H. Cave, curator Lloyd Botanic Garden. Received April 6, 1910.

Seeds of the following:

27491. PUERARIA PHASEOLOIDES (Roxb.) Benth.

Distribution.—Common in northern and eastern India, Malacca, and the southern part of China.

27492. PUERARIA sp.**27493. ABELMOSCHUS MANIHOT (L.) Medic.**

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. at the request of Mr. Charles J. Brand. Received April 6, 1910.

"The root of this plant is used by the Japanese as a size for their handmade papers, which are prepared from the inner bark of *Edgeworthia gardneri* and several varieties of the paper mulberry. The root is macerated in water and added to the paper pulp." (*Fairchild.*)

"The mucilage is obtained from the roots of this plant as follows: Wash off the dirt, soak in fresh water for some hours, and crush them to pieces. The substance thus prepared should then be put in a linen bag and soaked again in water. When the material gets thoroughly soft, the juice comes out of the bag by manipulating in the vat in which pulp has been previously mixed to receive the paste. The bag should be squeezed now and then, as the mucilage does not come out by itself. The paper maker can judge whether sufficient mucilage is in the water or not by its glutinous consistency. This is the best mucilaginous plant extensively used in Japan." (*Yokohama Nursery Co.*) (Seed.)

Distribution.—Scattered throughout the Tropics; naturalized in the southern part of the United States from Florida to Texas.

27494. DIOSPYROS TESSELLARIA Poir.

From Reduit, Mauritius. Presented by Dr. B. Boname, director, Agricultural Station. Received April 6, 1910.

"A tree, or shrub, with alternate, oval, or ovate, glabrous leaves. Flowers densely clustered, sessile, arising from lateral nodules on the young branches. The fruit is edible and is globular or ellipsoidal in form. The wood is valuable." (*Extract from Hiern, Transactions Cambridge Philosophical Society, vol. 12, pt. 1, p. 176.*) (Seed.)

Distribution.—In the forests of the highest parts of the island of Mauritius. Probably produces the ebony of Mauritius; fruits edible.

27495 and 27496.

From Kingston, Jamaica. Presented by Mr. Aston W. Gardner, manager, The Tangley Fruit Co. Received April 7, 1910.

27495 and 27496—Continued.

Cuttings of the following:

27495. *MANGIFERA INDICA* L.

Mango.

Mazagon. See No. 7042 for previous introduction.

27496. *CITRUS DECUMANA* (L.) Murr.

Pomelo.

Seedless white variety.

27497. JUNIPERUS PACHYPHLOEA Torr.

Collected in the Alamo National Forest, New Mexico. Received through Mr. Raphael Zon, chief of silvics, U. S. Forest Service, April 6, 1910.

See Nos. 24621 and 24624 for previous introductions.

27498 to 27501. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

Grown at Arlington Experimental Farm, Virginia, season of 1909. Numbered for convenience in recording distribution, April 14, 1910.

Seeds of the following. Notes by Prof. C. V. Piper:

27498. "Chromium green; late. Grown under temporary number 0867, from seed found in cowpea No. 23307, from Peking, China."

27499. "Straw yellow; very late. Grown under temporary number 0869, from Mr. W. W. Williams, Ingang, Fukien, China."

27500. "Straw yellow; very late. Grown under temporary number 0888, from Rev. J. M. W. Farnham, Shanghai, China."

27501. "Olive yellow; very late. Grown under temporary number 0889, from Rev. J. M. W. Farnham, Shanghai, China."

27502 to 27504. VIGNA UNGUICULATA (L.) Walp. Cowpea.

From Coimbra, Portugal. Presented by the Director, Royal Botanic Garden. Received April 6, 1910.

Seeds of the following:

27502. Small black seeded

27504. Blackeye.

27503. Small tan seeded.

27505. JUNIPERUS PROCERA Hochst. East African cedar.

From British East Africa. Procured through Mr. Raphael Zon, chief of silvics, Forest Service, Washington, D. C. Received April 8, 1910.

"East African cedar occurs abundantly in all the drier forests in the mountains of British East Africa at altitudes of from 7,000 to 11,000 feet, and occasionally extending as scattered specimens as low as 5,500 feet. It occurs mainly on the western slopes of the mountains, in what is known as the Kenia Forest, but is entirely absent from the wet southeastern side of the mountains. It appears to attain larger dimensions than any other juniper and often has a tall, straight, mastlike trunk. The largest specimen on record is at an altitude of approximately 9,850 feet, and has a mean diameter of 12 feet 4 inches and contains about 1,546 cubic feet of timber, of which probably about one-third is unsound. The tree has a serviceable bole of 65 feet and a total height of about 110 feet. The trunk forks a short distance from the ground, very likely as the result of fire. The wood is of great value and is scarcely distinguishable from the typical cedar of the familiar lead pencil. It is wonderfully durable in contact with the soil, and old trunks of great age in all stages of slow decay are found throughout the forest. Unfortunately, standing trees are very liable to decay, which detracts considerably from the value of the tree.

27505—Continued.

"The climate of the Kenia Forest varies from wet to very wet. On the south slope the rainfall is estimated at from 80 to 120 inches a year, and on the southeastern side the forest never becomes sufficiently dry to burn. On the western side, where the East African cedar grows, the rainfall is estimated at from 50 to 90 inches a year, the cedar usually being situated in the drier portions of the forest. The temperature, like that of most tropical countries, is comparatively equable with but little difference between mean summer and mean winter temperatures. At altitudes of 6,000 to 8,000 feet the extremes of temperature rarely go below 45° or above 70° F. The region is described as having a typically pleasant and invigorating extratropical climate. There is a rainy season from March to May, during which time it rains heavily, while during the drier season, from December to February, there are usually only occasional showers." (*Compiled from Colonial Report No. 41, East African Protectorate, 1907, by D. E. Hutchins, and the Report on the Forests of British East Africa, 1909, by D. E. Hutchins.*)

"Owing to the climatic conditions under which this tree grows it is doubtful whether it will succeed in this country, except, possibly, in Florida." (*Zon.*)

27506 to 27509. PHASEOLUS LUNATUS L.**Bean.**

From Tamatave, Madagascar. Procured by Mr. William J. Morse, from the Bureau of Manufactures, Department of Commerce and Labor, April 2, 1910.

Seeds of the following:

27506. White.

27507. White with red speck on hilum.

27508. White streaked with red.

27509. White speckled with red.

27510. GARCINIA MANGOSTANA L.**Mangosteen.**

From Buitenzorg, Java. Presented by the Director, Department of Agriculture. Received April 9, 1910.

See No. 25887 for description.

(Seed.)

27511. AMYGDALUS PERSICA L.**Peach.**

From Kwangning, Manchuria. Procured by Mr. Edward C. Parker, Bureau of Agriculture, Industry and Commerce, Mukden, Manchuria, from a peach tree in the gardens of Rev. William Hunter. Received April 9, 1910.

27512 to 27517.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 6, 1910.

Seeds of the following:

27512. DIOSPYROS LOTUS L.

From Batum, Caucasus, Russia. "(No. 1258a, February 24, 1910.) A wild persimmon growing all through the Crimea and the Caucasus, where the countries border the Black Sea. The small, black fruits are called '*Churma*' and are sold everywhere to the native population as sweetmeats. The Russians in the Caucasus utilize this persimmon as a stock for *D. kaki*, but claim that the grafting or budding is rather difficult. As this species is extremely drought and heat resistant, it is highly recommended as a stock for large-fruited persimmons in regions of the United States where the winters are mild and the summers dry and hot.

27512 to 27517—Continued.

"The trees themselves are ornamental, but the fruits are too small to be ever used by the white races as a dessert." (*Meyer.*)

See also S. P. I. Nos. 17173, 17905 to 17907, 18266, 18599, 19395, 22370, and 22599 for previous introductions.

Distribution.—Southern Europe and Asia; native from the Caucasus region eastward through northern India and central China to Japan; naturalized in the European countries bordering on the Mediterranean.

27513. Cicer arietinum L.**Chick-pea.**

From Batum, Caucasus, Russia. "(No. 1259a, February 24, 1910.) These chickpeas are locally called '*Arnout*' and are said to come from the vicinity of Anapa, Northern Caucasus. They are much eaten here by the natives and the Russians, generally boiled in soups or served with meat stews, also roasted and sugared and eaten as a sweetmeat. To be tested especially in the semi-arid sections of the United States." (*Meyer.*)

27514. Triticum durum Desf.**Wheat.**

From Batum, Caucasus, Russia. "(No. 1260a, February 25, 1910.) A winter wheat of first quality, called '*Kriek Bogda*,' said to come from Samsun, Asia Minor; costs 3 rubles per pood in Batum. To be tested in mild-wintered semi-arid sections of the United States." (*Meyer.*)

27515. Triticum durum Desf.**Wheat.**

From Batum, Caucasus, Russia. "(No. 1261a, February 25, 1910.) A winter wheat of second quality, coming from the same locality as the preceding (S. P. I. No. 27514); costs 2.80 rubles per pood in Batum. Recommended for the same localities as the preceding." (*Meyer.*)

27516. Gleditsia caspica Desf.

From Livadia, Crimea, Russia. "(No. 1262a, January 25, 1910.) A honey locust growing to be a tall tree, found along roads and in thickets, perhaps escaped. A good shade tree for the semiarid sections of the United States where mild winters prevail." (*Meyer.*)

27517. Gleditsia caspica Desf.

From Nikita, Crimea, Russia. "(No. 1263a, January 24, 1910.) Collected from a tall tree in the Botanical Garden at Nikita. Recommended for the same localities as the preceding number (S. P. I. No. 27516)." (*Meyer.*)

27518. Aleurites fordii Hemsl.**China wood-oil tree.**

From China. Purchased from Messrs. L. C. Gillespie & Sons, New York, N. Y. Received April 7, 1910.

See S. P. I. No. 25081 for description.

27519. Grewia cana Sond.**"Kafir raisin."**

From Bloemhof District, Transvaal, South Africa. Presented by Prof. J. Burt Davy, Government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria. Received April 9, 1910.

"This is a common bush of the southwestern Transvaal, about 4,000 feet altitude, subject to light frosts, growing to a height of 4 to 5 feet. It is generally found on outcrops of the dolomite limestone in districts having a rainfall of 20 inches in summer and with a winter drought lasting about six months. The berries are small, but produced in quantity; each contains a large stone, and the percentage of flesh

27519—Continued.

is small. The flesh is sweet, and the berries are eaten by Kafirs and white children. It is possible that the fruit might be improved under cultivation." (*Davy.*) (Seed.)

Distribution.—A branching shrub growing on the mountains in the southwestern part of Transvaal Colony and the northwestern part of Orange River Colony.

27520. CERVICINA UNDULATA (L. f.) Skeels.

(*Campanula undulata* L. f. Suppl. 142. 1781.)

(*Wahlenbergia undulata* DC. Monog. Campan. 148. 1830.)

The genus *Cervicina* was established by Delile (Fl. d'Egypte, vol. 6, pl. 5) in 1813, the type and only species being *Cervicina campanuloides* Delile. The name *Wahlenbergia* was apparently first used by Schrader (Cat. Hort. Goetting.), in 1814. This catalogue, which it has not been possible to consult, appears to have contained a mere list of botanical names not accompanied by descriptions, and *Wahlenbergia* was not, therefore, technically published in that place. The next use of *Wahlenbergia* is by Roth (Nov. Sp. Ind. Orient. 399), in 1821, where *Wahlenbergia elongata* of Schrader's catalogue is cited and described, and *Campanula capensis* L. cited as a synonym, making it the type of the genus *Wahlenbergia*. While *Cervicina campanuloides* Delile and *Campanula capensis* L. are very different plants, they are considered by all recent botanical writers to be congeneric, and the name *Cervicina*, being older, has been used in place of *Wahlenbergia* by various authors, including Druce (Fl. Berkshire 324. 1897), Hiern (Cat. Welw. Afr. Pl. 1: 631, 1898), and Moore (Journ. Bot. 41: 402. 1903), a precedent which is here followed.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burt Davy, Government agrostologist and botanist, Transvaal Department of Agriculture.

Received April 9, 1910.

"This plant is said to be much eaten by ostriches, as well as by other stock, including horses. One farmer claims that it is preferred to lucern, and that it keeps green and grows through the dry winter. It is a perennial, and prefers freshly turned, rather moist, sandy soil. It is widely distributed over the eastern Transvaal, from Pretoria eastward, at an altitude of 4,700 to 5,500 feet, with a rainfall of 26 to 33 inches, falling only in summer." (*Davy.*)

Distribution.—Linnaeus gives the habitat of *Campanula undulata* as Cape of Good Hope, without locality. The species is found in the coast region of South Africa, extending from the vicinity of Tulbagh, in the southwestern part of Cape Colony, through Uitenhage, the Albany district, and Caffraria, northeastward to the Albert district in Orange River Colony, and to Port Natal in Natal.

27531 to 27537.

From San Giovanni a Teduccio, near Naples, Italy. Purchased from Messrs. Dammann & Co. Received April 11, 1910.

Seeds of the following:

27531 to 27533. DOLICHOS LABLAB L.

Bonavist bean.

27531. Variety *albus*.

27533. Variety *sudanensis*.

27532. Variety *atropurpureus*.

27534. DOLICHOS LIGNOSUS L.

27535. GLYCINE HISPIDA (Moench) Maxim.

Soy bean.

Brown.

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27531 to 27537—Continued.**27536. CAPSICUM ANNUUM L.****Pepper.**

Sweet Spanish. "A medium-sized, somewhat elongated, nonpungent, sweet form of red pepper, having a highly developed red color and characteristic aroma. It is grown especially in Spain and is ground to form a sort of paprika marked by high color, sweet taste, and lack of pungency. It is hoped that this pepper will do well in this country and that its production may become a small industry here." (R. H. True.)

27537. CAPSICUM ANNUUM L.**Pepper.**

Szegedin Rose paprika or Hungarian paprika.

"This form of red pepper belongs to the group of medium-sized, somewhat elongated forms represented by a number of cultivated varieties. Its rather mild pungency, its very deep red color, and rather characteristic aroma combine to produce the commercial article known to the spice trade as *Hungarian* or *Szegedin paprika*. It is prepared for the market in different ways and with different degrees of care and yields paprika differing in quality according as the whole pod, the pod less the seeds, or the mere wall less the seeds and placentae are ground.

"This crop is grown commercially in the neighborhood of Szegedin and Kalocsa, in Hungary. It is ground in Hungary or in Austria and enters foreign commerce chiefly as a powder.

"It has been introduced into South Carolina, where, under the guidance of the Bureau of Plant Industry, U. S. Dept. of Agriculture, a small industry has been established. The yield for 1909 was about 45,000 pounds of dried pods. Owing to the limited demand for the product, this industry is likely to remain a small one, limited to the localities most favored in the matter of soil, climatic and labor conditions." (R. H. True.)

27538 to 27540. VITIS VINIFERA L.**Grape.**

From Quirili, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 8, 1910.

Cuttings of the following:

27538. From Quirili, Caucasus, Russia.

"(No. 469, March 1, 1910.) A fine table grape bearing heavy bunches of blue-black fruits. It is of local Caucasian origin and is called '*Dondrelabi*,' much forced in greenhouses in England under the name '*Gros Colmant de Caucase*.' Obtained from the experimental station near Quirili." (Meyer.)

27539. From Quirili, Caucasus, Russia.

"(No. 470, March 1, 1910.) A native Crimean variety of table grape, ripening very early. It bears the name of '*Schaus*.' The individual berries are of small size, but form long bunches; color, pale yellow; taste, very sweet; a popular variety and much exported. Obtained from the experiment station near Quirili." (Meyer.)

27540. From Quirili, Caucasus, Russia.

"(No. 471, March 1, 1910.) A native Caucasian table grape, called '*Kundza*.' Berries and bunches are medium large; color, white; of fresh, sweet taste; stands shipping very well. Recommended as an export table grape for California. Obtained from the experiment station near Quirili." (Meyer.)

27541. ELAEAGNUS ANGUSTIFOLIA L.

From Mamuret-ul-Aziz (Kharput), Turkey. Presented by Mr. William W. Masterson, American consul. Received April 8, 1910.

"These are cuttings of the small-seeded variety which over here seem to be more inclined to bush and spread, while those of the larger kind are inclined to go into a heavier growth." (*Masterson.*)

See Nos. 26594 and 26595 for description.

27553 to 27558.

From Choon Chun, Korea. Presented by Mr. J. Robert Moose. Received April 4, 1910.

Seeds of the following:

27553 to 27555. ANDROPOGON SORGHUM (L.) Brot.

27553.

Kowliang.

Blackhull. "Apparently typical of the variety." (*Carleton R. Ball.*)

27554.

Kowliang.

Brown. "Seeds rather large; glumes short, transversely shouldered, greenish to reddish brown, glabrous; perhaps a dwarf variety." (*Carleton R. Ball.*)

27555.

Kowliang.

Brown. "Seeds large; spikelets large, obovate; glumes vary from deep straw color to light brown." (*Carleton R. Ball.*)

27556. CHAETOCHLOA ITALICA (L.) Scribn.

Millet.

"This millet is the finest variety I have ever seen. It makes fine hay, but is grown here because of its value as a foodstuff for the people; in many parts of the country it is the staple food the year around; it is boiled and eaten instead of rice, and makes an excellent breakfast food. There is big money for the man who will introduce it in the United States, properly prepared as a breakfast food." (*Moose.*)

27557. GLYCINE HISPIDA (Moench) Maxim.

Soy bean.

Yellow seeded.

27558. PERILLA FRUTESCENS (L.) Britt.

See No. 22419 for previous introduction.

27559 to 27564.

From Togo, German East Africa. Presented by Mr. G. H. Pape, through Mr. A. B. Conner. Received April 4, 1910.

Seeds of the following:

27559. CANAVALI OBTUSIFOLIUM
(*Lam.*) DC.

27562. INDIGOFERA sp.

27563. LOTUS sp.

27560. CASSIA OCCIDENTALIS L.

27564. LOTUS sp.

27561. CROTALARIA sp.

27566. CITRUS sp.

From Kiaying, China. Presented by Mr. George Campbell. Received April 14, 1910.

"Cuttings of the great Chinese lemon. I saw a specimen which sprawled over a wide space and was said to yield about 150 pounds of fruit every year, mainly used for preserves, or rather, candying, like citron." (*Campbell.*)

27567. ANONA CHERIMOLA Miller.**Cherimoya.**

From Chile. Presented by Mr. Hervey Gulick, Gatico, Chile. Received April 15, 1910.

"This seed is from a tree that I have not seen. The fruit is pear shaped and the size of a large orange, occasionally reaching 6 inches in diameter. The flavor is a little pitchy or piney, but very good. The tree grows in the central part of Chile, also in Peru, semitropical climates. Central California should be suitable for its growth." (Gulick.)

27568 to 27570.

From Ceylon, India. Procured by Mr. Albert J. Perkins. Received April 11, 1910.

Seeds of the following:

27568. BOMBAX MALABARICUM DC.

"A large tree with a buttressed base like southern cypress; large maroon flowers, and pods which contain a cotton that is used in making fabrics." (Perkins.)

27569. CANAVALI GLADIATUM (Jacq.) DC.

White seeded.

27570. PONGAM PINNATA (L.) W. F. Wight.

Distribution.—A tall, erect tree or climber with glabrous branches and leaves, found in India from the central Himalayas to Ceylon and Malacca, and throughout the Malayan islands to the northern part of Australia.

27571 and 27572.

From Ancon, Canal Zone, Panama. Presented by Mr. N. E. Coffey, quartermaster, Ancon Hospital, at the request of Mr. H. F. Schultz. Received April 18, 1910.

Seeds of the following:

27571. CARYOPHYLLUS JAMBOS (L.) Stokes.**Rose-apple.**

See No. 2941 for description.

Distribution.—Probably native of India; cultivated and naturalized from India to Australia.

27572. CHRYSOPHYLLUM CAINITO L.**Star-apple.**

"One of the most common fruit trees indigenous to the Canal Zone and frequently cultivated in the native (Panama) and West Indian settlements. The trees attain a height of from 25 to 75 feet and are characterized by their magnificent evergreen foliage, dark green above, and aureate, sometimes glaucous, beneath. The fruit is highly prized by the natives, but, on account of the milky and gluelike juice it contains, it is not in as general favor among Americans as its otherwise pleasant taste would indicate. It has the size and appearance of a small apple, globose and regularly 6 to 10 celled, so that, when halved, the inside of the fruit presents a star-shaped formation, each segment containing one seed, rarely, through abortion, none.

"The color of the berry is pale green, blue, or purple; in the case of this introduction the fruit is purple, but it is not supposed to come true to form through seeds. The pulp has a jelly-like consistency and, when fully ripe, a rich yet delicate flavor." (Schultz.)

Distribution.—Cultivated and probably native in Panama, Colombia, Peru, Guiana, and the West Indies.

27574. DATURA sp.

From Monterey, Cal. Presented by Mr. H. A. Greene, through Mr. Peter Bisset.

Received April 26, 1910.

A supposedly red-flowered variety.

27575. CARICA PAPAYA L.**Papaya.**

From Dongola, Ill. Purchased from the Rose Valley Nurseries, Martin Lewis Benson, proprietor. Received April 23, 1910.

"The female plants of this variety bear a fruit the size of a large muskmelon and are as easily fruited under glass as the tomato. The male plants produce in long racemes and in large clusters enormous quantities of beautiful, waxlike, star-shaped flowers." (*Rose Valley Nurseries.*) (Seed.)

27576 to 27579.

From Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received April 25, 1910.

Seeds of the following:

27576. PASPALUM MARITIMUM Trin.

"This grass is the first to take possession of clearings, and is much relished by cattle, and consequently highly valued by the natives. It grows with astonishing rapidity, throwing out runners 20 to 30 feet in length in a very short time. Its height when in flower is 2 to 3 feet. It has a rather thick rhizome, which does not dry out easily, and consequently makes the grass very hard to exterminate when once established. For Florida it would probably make an excellent sand binder and pasture. This grass, according to Dr. Huber, here, has never been named, and it is not known whether it is indigenous or introduced. From its behavior it would appear to be introduced." (*Fischer.*)

Distribution.—In the Provinces of Bahia and Para, in Brazil, and in the Guianas.

27577. AMBELANIA TENUIFLORA Muell. Arg.

"This is called here *Pepino do mato*, i. e., *cucumber of the woods*, or *wood cucumber*. It is a yellow fruit about the size and shape of a small cacao fruit. It contains two seed cavities surrounded by a white flesh of rather firm consistency containing an abundant supply of latex. It is not a fruit that I could recommend very highly. I have not been able to eat it, although it is eaten by the natives." (*Fischer.*)

Distribution.—In the primeval woods along the banks of the Amazon in the Province of Para, Brazil.

27578. RHEEDIA MACROPHYLLA (Mart.) Planch. & Triana.

"*Bacury pary* (pronounced *Bah-coo-ré pah-ré*). This is a yellow or orange-yellow fruit the size of an egg, with a very pronounced beak at the calyx end and filled with four seeds, each surrounded by a very small quantity of agreeable-tasting and refreshing acidulous pulp. This tree is said to be quite common about Para, but as yet I have not seen one, having purchased the fruits on the market. The basketful as I purchased it smelled exactly like a basketful of gooseberries." (*Fischer.*)

Distribution.—French and Dutch Guiana and the valley of the Amazon in the Province of Para, Brazil.

27579. ROLLINIA ORTHOPETALA A. DC.

"This is, as Prof. Baker wrote, the finest anonaceous fruit in tropical America. It is the only one of those which I have tasted that I liked, and on first trial

27576 to 27579—Continued.

I immediately pronounced it delicious. The seeds are enveloped in a large quantity of pulp, which is of a custard-like consistency and of a very agreeable acidulous taste. I do not know what fruit it resembles most in taste. It would undoubtedly do to try in the Everglades, as it grows here in localities which are often flooded for some time during the rainy season." (*Fischer.*)

Distribution.—Paraguay and the adjacent parts of Brazil and Argentina.

27580. SESBAN GRANDIFLORUM (L.) Poir.

From Poona, India. Received through Mr. P. S. Kanetkar, director, Empress Botanic Gardens, April 27, 1910.

"A small tree of very rapid growth, with large flowers and short life. It thrives in any irrigated soil. The flowers and young pods are a favorite vegetable." (*Woodrow's Gardening in India*, p. 279.)

Preparation of *Sesban grandiflorum* as a vegetable: The parts used are: (1) The tender shoots, (2) the fresh flowers, (3) the pods in a tender state, (4) the seeds in tough pods.

The tender shoots are chopped fine, boiled, and the boiled water is thrown away. Salt, chili powder, and "masala," or condiment powder, are added for flavor. Boiling sweet oil (one-half ounce to the pound of vegetable), to which is added asafetida and whole mustard and cumin seeds, is poured on the boiled vegetable. The oil is mixed with the vegetable, which is now kept on a slow fire for seasoning, the pot being covered to condense the steam.

The flowers are washed clean and the standard petal and pistil are taken out of each flower (it is not understood why these are rejected). The chopped flowers are subjected to a slight steaming in a vessel. Afterwards salt, chili powder, and condiment powder are added. From this preparation three different dishes can be made:

(a) A sour dish, which is obtained by adding curds and pouring boiled oil (one-half ounce to the pound of vegetable) or ghee, preferably the latter, to which mustard (one thirty-second to one-half ounce of oil), asafetida (5 grains to one-half ounce of oil), and cumin seeds (one thirty-second to one-half ounce of oil) are always added while boiling.

(b) Curry can be made from the stuff by adding water, proportionate salt, chili powder, turmeric powder, and a little gram pulse flour to give it consistency. The curry must be well boiled—one-eighth of the water should steam out. Then boiling oil, to which mustard, asafetida, and cumin seeds are added, is poured into the curry. After a little further boiling the curry is ready for use.

(c) To the steamed preparation gram pulse flour is added sufficient to make it thick; salt, chili powder, and condiment powder are added and the whole is placed in a vessel on a slow fire to dry off.

The tender pods are cut up into half-inch and inch bits and boiled and then either made into curry like (b) or a solid vegetable like (c). When made into curry, gram pulse about one-fourth the volume of the bits of pods is boiled with them. A sour dish can also be made from the boiled pod bits like (a).

The seeds, before they get tough, are usually mixed with the pod bits when made into curry. No special dish is made from the seeds.

The "masala" (this is a Bombay word) or condiment powder referred to above is made up of the following, fried in sweet oil—2 ounces asafetida, 2 ounces cloves, 2 ounces cinnamon leaves, 2 ounces cinnamon bark, 4 ounces turmeric, 2 pounds coriander, 2 ounces cumin seed, 2 ounces *Carum nigrum*, 2 ounces coconut kernel, 4 ounces sesame.

27580—Continued.

The whole plant has mild purgative properties and the vegetable preparations above described are not much indulged in. (*Kanetkar.*)

Distribution.—Plains of the western peninsula of India and from the island of Mauritius eastward to the northern part of Australia.

27586. VIGNA UNGUICULATA (L.) Walp.**Cowpea.**

From Honolulu, Hawaii. Presented by Mr. F. G. Krauss, agronomist, Hawaii Experiment Station. Received April 20, 1910.

"*Wilcox.* A cowpea which, so far as I have been able to determine, originated in our trials of 1907, either as a mutant or rogue. As it does not resemble any of the half dozen varieties we have been growing in recent years, I do not think it is a hybrid. It is far ahead of anything we have grown in cowpeas. In the fully developed form, before drying, the pods are a beautiful deep crimson." (*Krauss.*)

27587. CASTANEA sp.**Chestnut.**

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received April 11, 1910.

Korean.

27598 and 27599. ZEA MAYS L.**Corn.**

From Mexico. Procured by Mr. Sam E. Magill, American consul, from José Maria M. Sotomayor. Received April 13, 1910.

Seeds of the following:

27598. "*Apepitillado*" produced near Ocatlan.

27599. "*Apepitillado*" produced near Ocatlan by Vidal Gutierrez.

NOTE.—These packages were broken open and the seed probably mixed.

27600 to 27602. TRIFOLIUM PRATENSE L.**Red clover.**

From Roikenvik, Norway. Presented by Mr. Lars Hvinden. Received April 13, 1910.

Seeds of the following:

27600. *Molstad.*

27601. *Toten.*

"These two clovers are late varieties and should not be grown on marshy soil, but they stand the severest cold for three and four years in Norway." (*Hvinden.*)

27602. *Hvinden's.* "A red clover which I by chance have discovered.

It has grown on my farm for years and gave the richest crops I ever saw.

It is earlier than *Molstad* and *Toten* clover and can be cut twice in the summer." (*Hvinden.*)

27603 to 27608. MELILOTUS spp.

From St. Petersburg, Russia. Presented by Dr. A. Fischer v. Waldheim, director, Royal Botanic Gardens. Received April 4, 1910.

Seed of the following:

27603. MELILOTUS DENTATA (Waldst. & Kit.) Pers.

27604 to 27606. MELILOTUS INDICA (L.) All.

27607. MELILOTUS ITALICA (L.) Lam.

27608. MELILOTUS MESSANENSIS (L.) All.

27609 and 27610. ROLLINIA spp.

From Horqueta, Paraguay, South America. Presented by Mr. T. R. Gwynn.
Received April 20, 1910.

Seeds of the following; notes by Mr. Gwynn:

27609. ROLLINIA ORTHOPETALA A. DC.

"*Aratecuŷ Yvirá mató.* A good-sized tree, as large as the orange; is handsome and has splendid foliage. The fruits are small."

Distribution.—Paraguay and the adjacent parts of Brazil and Argentina.

27610. ROLLINIA EMARGINATA Schlecht.

"*Aratacu-quatu.* This is a small bush growing here in the open camp in almost any soil. The fruit is large and the best class of all according to my thinking."

See No. 25528 for previous introduction.

27611 to 27650.

From Erivan, Caucasus, Russia, close to the frontiers of Persia and of Asia Minor.

Received through Mr. Frank N. Meyer, agricultural explorer, who obtained them from the Government Experimental Fruit Garden at Erivan, March 28, 1910. Received April 14 and 30, 1910.

"Erivan is situated at an elevation of 3,229 feet above sea level. The climate is decidedly semiarid with even a slight degree of aridness. The winters are cold with very little snow, the summers hot and dry; there are heavy rains at intervals in the spring and fall. The climate as a whole seems to resemble very much that of the southern Rocky Mountain region. All the crops are irrigated in summer."

Cuttings of the following:

27611. ELAEAGNUS ANGUSTIFOLIA L.

"(No. 711.) A local variety called '*Matna-pshat.*' See note on No. 709 (S. P. I. No. 27775), which is the same. The dried fruits of these 'Russian olives' (as they are called here) are to be found in the native fruit stalls nearly the year round. The trees are mostly seen planted around the fields as wind-breaks, the distance between the trees varying from 5 to 15 feet." (*Meyer.*)

27612. ELAEAGNUS ANGUSTIFOLIA L.

"(No. 712.) A local variety called '*Unab-pshat.*' Fruits somewhat smaller than the *Matna-pshat* (S. P. I. No. 27611), skin thicker; not as tender and sweet nor as prolific, but ripens a fortnight earlier and is a better keeper and shipper." (*Meyer.*)

27613. AMYGDALUS PERSICA L.

Peach.

"(No. 713.) A native Caucasian variety of peach called '*Salami,*' meaning 'congratulatory.' Fruits large, round, and a little flattened; general color greenish yellow with deep-red cheek; clingstone; large seed; flesh pale yellow with reddish streaks near the stone, juicy and of sweet taste. Ripens the beginning of October." (*Meyer.*)

27614. AMYGDALUS PERSICA L.

Peach.

"(No. 714.) A native Caucasian variety of peach called '*Saffrani,*' meaning saffron. The fruits are of medium size; general color saffron yellow, cheek streaked with deep red. The skin has a saffron-like scent. Clingstone. Flesh yellow, juicy, aromatic, and sweet. Ripens in September." (*Meyer.*)

27615. AMYGDALUS PERSICA L.

Peach.

"(No. 715.) A local variety of peach called '*Naryndji,*' meaning golden. Fruits large, almost perfectly round; general color golden yellow, blood red on

27611 to 27650—Continued.

sunny side. Flesh of yellow color with red streaks near the stone. Clingstone. Ripens the beginning of October and is a good shipper." (*Meyer.*)

27616. AMYGDALUS PERSICA L.

Peach.

"(No. 716.) A Caucasian variety of peach called '*Aidinofski.*' Of oblong shape, yellow color. Clingstone. A very late ripener." (*Meyer.*)

27617. AMYGDALUS PERSICA L.

Peach.

"(No. 717.) A Caucasian variety of peach, called '*Krashni Karmir.*' Fruits very large, color red; clingstone; late." (*Meyer.*)

27618. AMYGDALUS PERSICA L.

Peach.

"(No. 718.) A Caucasian variety of peach, called '*Aidinof Karmir.*' Fruits very large (like a good-sized apple), of red color; juicy; a late ripener." (*Meyer.*)

27619. AMYGDALUS PERSICA L.

Peach.

"(No. 719.) A local variety of peach, called '*Norrast-guli.*' Fruits large, of nearly round shape; skin light yellowish green, very downy, medium thick; flesh whitish yellow, very juicy, of aromatic, sour-sweet taste; stone large, cling; kernel sweet like almond. The earliest ripening peach in this locality." (*Meyer.*)

27620 to 27650. VITIS VINIFERA L.

Grape.

"The grapevines here are planted on ridges 12 to 15 feet apart, with broad furrows running along them, in which the water is allowed to flow. At the approach of cold weather (early November) the vines are covered with loose soil to prevent them from freezing. At the end of March they are uncovered again and pruned. All the Asiatic and Caucasian grapes seem to have to be pruned with long wood to produce the heaviest yields. The many shoots which the plants are allowed to have are trained over the ground, the fruit-bearing stems being put on short forked stakes to prevent the bunches from touching the soil. When trained to wires the grapes shrivel and dry from the great heat. This system, which is very simple and requires but little work, could safely be introduced in those sections of the United States where the winters are too cold for the vinifera type of grapevines to survive unless protected, but where the summers are hot enough to make the grapes ripen. All the vines in the Government garden are grafted on American stock, so as to resist the *Phylloxera.*" (*Meyer.*)

27620. "(No. 720.) A local variety of grape, called '*Ghulabi.*' Bunches long, of very loose and irregular conical shape. Berries round, long, not of uniform size, general color dark pink, covered with a thick coat of white bloom; skin thick, red, and inedible; flesh of pale yellowish-green color, juicy, aromatic, and sweet; few seeds; is used both as a table and wine grape. A prolific bearer. Ripens in the latter part of September and can be kept from two to three months." (*Meyer.*)

27621. "(No. 721.) A Caucasian variety of table grape called '*Shafaï.*' Bunch large, up to 1 foot long, of loose, conical shape. Berries large, irregular, elongated, slightly bent, and not of uniform size; color greenish-yellow with waxy bloom; skin thick, light yellow with a few dark spots around the end; flesh firm, of pale yellow color, not sweet or juicy; seeds always one, seldom two. Ripens at the beginning of October. Can be kept for six months. Does not suffer from *Oidium.*" (*Meyer.*)

27611 to 27650—Continued.

27622. "(No. 722.) An Asiatic table grape, called '*Ghusaine*.' Bunch 1 to 1½ feet long, of loose, conical shape, with side bunches. Berries of medium size, elongated, sometimes slightly pressed in on one side. In a bunch there are always a few half-dried berries. They are pale yellow in color, with a whitish bloom; flesh firm, of very sweet and spicy taste. Contains usually two seeds, seldom one. A fine table grape, also used for wine making. Not very prolific, and needs a long season to ripen." (Meyer.)
27623. "(No. 723.) An Asiatic table grape, called '*Kishmish*.' Bunch medium size, conical, compact. Berries small, slightly elongated, but less so than red Kishmish; color milk-white with whitish wax bloom and a few red dots; skin white, thick; flesh white with light yellowish hue, juicy and sweet; three rudimentary seeds. Ripens at the beginning of September and is a prolific bearer." (Meyer.)
27624. "(No. 724.) A variety of Asiatic table grape, called '*Korsa Kishmish*,' resembles No. 723 (S. P. I. No. 27623) very much, but the color of the berries is less white, the shape irregular, and the fruit ripens earlier." (Meyer.)
27625. "(No. 725.) An Asiatic table grape, called '*Kishmish*' (red). Bunch large, long, medium compact, of cylindrical-conical shape, with side bunches. Berries small, egg-shaped, uneven, pink colored, with whitish pink bloom. Skin thin; flesh pale yellow, juicy, and very sweet. Rudimentary seeds only. Ripens about the end of August." (Meyer.)
27626. "(No. 726.) An Asiatic table grape, called '*Kishmish daba*.' Said to bear small, compact bunches of small berries; color white; early and prolific." (Meyer.)
27627. "(No. 727.) A local variety of table grape, called '*Askari*.' Bunch large, long, of loose, irregular-conical shape with side bunches. Berries small, elongated egg-shaped; color pale green, with a few dark dots. Flesh juicy, not sweet. Ripens near the end of August. A prolific bearer and a very fine table grape, but can not be transported on account of its tender skin, which often breaks open after a rain when fully ripe. Suffers greatly from *Oidium*. Recommended for home use in dry regions with long and hot summers." (Meyer.)
27628. "(No. 728.) A table grape called '*Malaki*.' Said to be black, early, and very sweet." (Meyer.)
27629. "(No. 729.) A table grape called '*Kizil-sioum*.' Said to be yellow, early, and sweet." (Meyer.)
27630. "(No. 730.) A table grape, called '*Mamarsa ghansi*.' Said to be a very good, sweet, black grape. Late." (Meyer.)
27631. "(No. 731.) A table grape, called '*Kordash*.' Said to be black, small, and very sweet." (Meyer.)
27632. "(No. 732.) A table grape, called '*Danna bazan*.' Said to be black, small, and of subacid flavor." (Meyer.)
27633. "(No. 733.) A table grape, called '*Kara-sarma*.' Said to bear large, sweet, black berries. Early." (Meyer.)
27634. "(No. 734.) A table grape, called '*Alachki*.' Said to be red, large, sweet, and very early." (Meyer.)

27611 to 27650—Continued.

- 27635.** "(No. 735.) A table grape, called '*Esandri*.' Said to be black and very early." (*Meyer*.)
- 27636.** "(No. 736.) A table grape, called '*Esandri*.' Said to be a variety of No. 735 (S. P. I. No. 27635), bearing grapes of a greenish color." (*Meyer*.)
- 27637.** "(No. 737.) A table grape, called '*Chatchabash*.' Said to be yellow; a late ripener, and possessing good transporting and keeping qualities, being kept until February." (*Meyer*.)
- 27638.** "(No. 738.) A table grape, called '*Kharmatmak*.' Said to be yellow and very late." (*Meyer*.)
- 27639.** "(No. 739.) A table grape, called '*Kharashani*.' Said to be white, large, and late." (*Meyer*.)
- 27640.** "(No. 740.) A table grape, called '*Sev-ursa*.' Said to be a large, sweet, black grape, and a late ripener." (*Meyer*.)
- 27641.** "(No. 741.) A table grape, called '*Sgòtoruk*.' Said to be a large black grape, ripening late." (*Meyer*.)
- 27642.** "(No. 742.) A table grape, apparently of local origin, called '*Ghalilou*.' Bunch medium size, medium compact, of elongated-conical shape. Berries small, elongated, elliptical. Color amber yellow. Skin tender, pale yellow, sometimes of rusty color on sun side. Flesh firm, very sweet; a fine dessert grape. Ripens at the beginning of August, the earliest variety in the Erivan district." (*Meyer*.)
- 27643.** "(No. 743.) A table grape, called '*Aldara*.' Said to be large, sweet, and early." (*Meyer*.)
- 27644.** "(No. 744.) A table grape, called '*Shakari-bira*.' Said to be white, large, and round. A very late ripener." (*Meyer*.)
- 27645.** "(No. 745.) A table grape, called '*Shirshira*.' Said to be white, large, and very sweet. Late." (*Meyer*.)
- 27646.** "(No. 746.) A table grape, called '*Aldara*.' Said to be large and black. Late." (*Meyer*.)
- 27647.** "(No. 747.) A local table grape, called '*Rshi-baba*.' Said to be red." (*Meyer*.)
- 27648.** "(No. 748.) A wine grape called '*Chardju*.' Said to be white; bunches small, but dense. Medium late. Produces a fair wine." (*Meyer*.)
- 27649.** "(No. 749.) A local variety of table grape, called '*Ghalilou*.' No. 2. Greatly resembles No. 742 (S. P. I. No. 27642), but of a reddish color." (*Meyer*.)
- 27650.** "(No. 750.) A wine grape, called '*Charashani*,' said to be red, and of medium quality." (*Meyer*.)

27651 to 27659. SOLANUM TUBEROSUM L.**Potato.**

From Bolshaia Viska, Russia. Received from Mr. B. E. Neuberg, through Mr. W. V. Shear, April 19, 1910.

Tubers of the following; descriptive notes by Mr. Shear:

- 27651.** *Vorbote*. "Medium-sized, round to oblong, slightly flattened tubers. Eyes shallow; skin yellowish-white; flesh white. An early variety."

27651 to 27659—Continued.

- 27652.** *Ruby Queen*. "Round to oblong, flattened; skin purple; eyes shallow. Very early."
- 27653.** *Fürst Bismarck*. "Medium-sized, round tubers; skin deep flesh color; eyes shallow."
- 27654.** *Norma, Cimball's*. "Long, cylindrical, medium-sized tubers; skin yellowish; eyes shallow. A medium-early variety."
- 27655.** *Epicure*. "Medium-sized, round to oblong tubers; skin yellowish-white; eyes rather deep. An early variety."
- 27656.** *Entente Cordiale*. "Medium-sized, yellowish-skinned tubers, round to oblong, slightly flattened; eyes shallow. An early variety."
- 27657.** *Cécilia*. "Tubers medium-sized, oblong, flattened; skin white; flesh yellowish white."
- 27658.** *Imperator, Richter's*. "Medium-sized, oblong, flattened tubers; skin yellowish white; eyes shallow."
- 27659.** *Industrie*. "Medium-sized, oblong, flattened tubers; skin yellowish white; eyes shallow; sprouts white."

27660 and 27661.

From Mayaguez, Porto Rico. Received through Mr. D. W. May, special agent in charge, Porto Rico Agricultural Experiment Station. Received April 19, 1910.

Seeds of the following:

- 27660.** *ERYTHRINA UMBROSA* H. B. & K.

"This is a most excellent leguminous shade for coffee, and a windbreak for citrus groves." (*May*.)

Distribution.—On the mountains along the coast of Venezuela between La Guayra and Caracas.

- 27661.** *STERCULIA FOETIDA* L.

See No. 17139 for description.

27662 to 27674.

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 8, 1910.

Seeds of the following:

- 27662.** *FAGUS ORIENTALIS* Lipsky.

From Tiflis, Caucasus, Russia. "(No. 1286a, Mar. 21, 1910.) The Caucasian beech, which grows to be a tall and imposing tree and forms whole forests all through Caucasus. The wood is excellent material for tubs and barrels, furniture and tools. These seeds came from the vicinity of Yelisavetpol, eastern Caucasus, where there is only a slight annual rainfall (10-12 inches). Recommended as a shade and timber tree for mild-wintered, semiarid sections of the United States. Obtained from Mr. A. C. Rollow, director of the Botanic Gardens at Tiflis. Also see note for No. 406 (S. P. I. No. 26862)." (*Meyer*.)

Distribution.—Throughout the Caucasus region and in the province of Ghilan, northwestern Persia.

- 27663.** *ALLIUM CEPA* L.

Onion.

From Tiflis, Caucasus, Russia. "(No. 1287a, Mar. 19, 1910.) A many-headed variety of native Caucasian onion, coming originally from the vicinity of Yelisavetpol, but now also much grown around Tiflis. The curiosity about this

27662 to 27674—Continued.

onion is, as I was informed, that the seeds are sown in the fall in beds or in rows and the young plants left over winter in the open; during the following summer they make a strong growth and produce often five or six onions in a cluster. As Yelisavetpol is situated in a semiarid region, this onion ought to be valuable to settlers in the mild-wintered, semiarid regions of the United States. Obtained from Mr. K. A. Kees, seed dealer, in Tiflis." (*Meyer.*)

27664. CUCUMIS MELO L.**Muskmelon.**

From Tiflis, Caucasus, Russia. "(No. 1288a, Mar. 19, 1910.) Mixed varieties of native Caucasian muskmelons, among which there are said to be some very fine varieties. To be tested in semiarid regions. Purchased in Tiflis." (*Meyer.*)

27665. CUCUMIS SATIVUS L.**Cucumber.**

From Tiflis, Caucasus, Russia. "(No. 1289a, Mar. 19, 1910.) A native Caucasian variety of cucumber, half-long, of green color. Said to be a really good sort, worthy of introduction. To be tested in semiarid regions. Purchased in Tiflis." (*Meyer.*)

27666. SOLANUM MELONGENA L.**Eggplant.**

From Tiflis, Caucasus, Russia. "(No. 1290a, Mar. 19, 1910.) A native Caucasian variety of eggplant. The fruits are of a dark-purple color, elongated shape, and medium size. Considered to be a good sort. For trial in semiarid regions." (*Meyer.*)

27667. TILIA sp.

From Tiflis, Caucasus, Russia. "(No. 1293a, Mar. 22, 1910.) A beautiful native Caucasian shade tree, growing to be very old and of large dimensions. Of value as a park and avenue tree in the mild-wintered sections of the United States. See also No. 408 (S. P. I. No. 26892)." (*Meyer.*)

27668. HALIMODENDRON HALODENDRON (Pallas) Voss.

From Tiflis, Caucasus, Russia. "(No. 1294a, Mar. 14, 1910.) A very spiny shrub, native of the Caucasus, apparently very drought resistant. Suitable as an ornamental garden shrub and as a hedge plant in semiarid regions. Collected in the garden of the School for Horticulture in Tiflis." (*Meyer.*)

Distribution.—The species was described by Pallas from the vicinity of Irtysh River in Siberia and is now known to occur from the salt steppes of Transcaucasia to Dzungaria and the Altai region of southern Siberia.

27669. RHAMNUS PALLASII Fisch.

From Tiflis, Caucasus, Russia. "(No. 1295a, Mar. 22, 1910.) An ornamental deciduous shrub, growing on very dry and sterile places. Recommended for bank binding and as an ornamental garden shrub in semiarid, fairly mild-wintered regions. Obtained from the Botanical Garden in Tiflis." (*Meyer.*)

Distribution.—Russian and Turkish Armenia, and the Provinces of Azerbaijan and Ghilan in northwestern Persia.

27670. PYRUS NIVALIS ELAEAGRIFOLIA (Pall.) Schneider.

From Tiflis, Caucasus, Russia. "(No. 1296a, Mar. 22, 1910.) A shrubby, wild pear, occurring on very dry places, mainly in Eastern Caucasus. Recommended as a dwarfing stock for pears and as an ornamental garden shrub in regions where the winters are not too severe, but the summers hot and dry. Obtained from the Tiflis Botanical Garden." (*Meyer.*)

See No. 27134 for previous introduction.

27662 to 27674—Continued.**27671. JUNIPERUS FOETIDISSIMA Willd.**

From Tiflis, Caucasus, Russia. "(No. 1297a, Mar. 22, 1910.) A tall-growing tree, occurring on dry places. Of value as an ornamental and timber tree in dry regions where fairly mild winters prevail. Obtained from the Tiflis Botanical Garden." (*Meyer.*)

Distribution.—In the coniferous forests on the subalpine and alpine slopes of the mountains of Greece, and in Armenia and the Province of Karabagh in southeastern Russia.

27672. JUNIPERUS OXYCEDRUS L.

From Tiflis, Caucasus, Russia. "(No. 1298a, Mar. 22, 1910.) Obtained from the Tiflis Botanical Gardens." (*Meyer.*)

See No. 26884 for further description.

27673. JUNIPERUS COMMUNIS L.

From Tiflis, Caucasus, Russia. "(No. 1299a, Mar. 22, 1910.) This well-known shrub, occasionally growing into a small tree, occurs on many places in the Caucasus and is worthy of test as an ornamental evergreen in the semiarid sections of the United States. Obtained from the Tiflis Botanical Garden." (*Meyer.*)

Distribution.—Europe, northern Asia, northern China, the mountains of northern Africa, and in the United States from the Canadian boundary southward to North Carolina, Arizona, and northern California.

27674. PAEONIA MLOKOSEWITSCHI Lomakin.

From Tiflis, Caucasus, Russia. "(No. 1300a, Mar. 22, 1910.) A rare, herbaceous, native Caucasian peony, bearing yellow flowers. Obtained from the Tiflis Botanical Garden." (*Meyer.*)

Distribution.—Slopes of the Caucasus Mountains in the Province of Talysch in southeastern Russia.

27675. MEDICAGO ARABICA (L.) All.

From Sukhum-Kale, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, Mar. 31, 1910.

This was picked out of No. 27343; see this number for remarks.

27676 to 27679.

From Loutulim, Goa, Portuguese India. Presented by Mr. F. S. Cardosa. Received Apr. 16, 1910.

Seeds of the following:

27676. CANAVALI GLADIATUM (Jacq.) DC.

27677. CANAVALI OBTUSIFOLIUM (Lam.) DC.

27678. DOLICHOS LABLAB L.

Bonavist bean.

27679. MIMUSOPS KAUKI L.

"Adam's-apple."

See No. 25909 for description.

"This is a very large, hard, timber tree, very productive. Its fruit is a berry about the size of a small egg and is very palatable and delicious when the trees are carefully cultivated." (*Cardosa.*)

27680. CARYOPHYLLUS AROMATICUS L.**Clove.**

From Zanzibar, East Africa. Procured by Mr. Arthur Garrels, American consul.
Received Apr. 20, 1910.

"A small tree, 12 to 15 feet high, native in the Molucca Islands, now cultivated widely in tropical regions for the dried, unopened flower buds, which constitute the cloves of commerce. The chief source of cloves is now the island of Zanzibar, where the culture is carried on as a Government monopoly. The unopened flower buds are picked, freed from their stems, and cured for commerce, the original brilliant red of the product changing to a dark-brown color. Cloves contain a pungent, fragrant, volatile oil in great quantity (sometimes as high as 25 per cent), which gives to the product its highly prized quality as a spice. The oil, when separated by distillation, is known to commerce as clove oil, and owing to its properties as an antiseptic and local anesthetic is much used in dental practice. Tannin is present in cloves as high as 17 per cent. They were formerly used as a dyestuff for coloring silks." (R. H. True.) (Seed.)

27682 and 27683. ORYZA SATIVA L.**Rice.**

From Philippine Islands. Procured by Mr. William S. Lyon, Manila, P. I.
Received Apr. 21, 1910.

Seeds of the following:

27682. MIMIS.**27683. MILAGROSA.****27684. LAUROCERASUS OFFICINALIS Roem.****Laurel-cherry.**

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer. Received Apr. 23, 1910.

"(No. 485, Mar. 17, 1910.) A variety of laurel-cherry coming from the higher mountains of the Caucasus and able to stand temperatures of 10° below zero F. It is of rather slow growth and low, spreading habits. A good evergreen shrub for parks and gardens in certain sections of the United States, such as Long Island, etc." (Meyer.)

27685 to 27703.

From Belgrade, Servia. Presented by the Chief of the Culture Department, Servian Royal Ministry of Agriculture, forwarded through Mr. Robert S. S. Bergh, American consul. Received April 13, 1910.

Cuttings of the following; the information regarding them was translated, from the labels which accompanied the cuttings, by Prof. Woislav Petrovitch, of the Department of Commerce and Labor, Washington, D. C.:

27685 to 27697. VITIS VINIFERA L.**Grape.**

27685. "*Sitna Bellina*." Small white grapes, used to make wine.

27686. "*Procoupatz*." Name derived from that of a town of Eastern Servia, Prokouplie. Used to make wine.

27687. "*Bella Adackalcka*." "*White Adackalcka*." For table use.

27688. *White "Drenack"*. For table use.

27689. *Red "Drenack"*. Long, pointed grapes, for table use.

27690. "*Lipolist*." Ordinary (common) grapes. Title derived from the similarity of the leaves of this vine and of the linden tree. (In Servian "*Lipa*"=linden, "*List*"=leaf.)

27685 to 27703—Continued.

27691. "*Zatchinak*." Grapes used for wine making in combination with other varieties. ("Zatchinak" means spice.)
27692. "*Plovđina*." Blue grape used for wine making.
27693. "*Kroupna Bellina*." Large, round, white grape used for wine making.
27694. "*Skadarka*." Used for wine making.
Name derived from Lake Skadar of Montenegro.
27695. (Name illegible.) Used for wine making.
27696. "*Smederevka*." Used for table grapes and wine making.
27697. Red "*Adackalcka*." For table use.
27698. *CYDONIA* sp. Quince.
"*Quince of Leskovatz*." Leskovatz is a town of southern Servia.
27699. *PYRUS* sp. Pear.
"*Summer Butter-pear*."
27700. *PRUNUS* sp. Plum.
"*Servian*." By this name is known a variety of dark plums that ripen very late in autumn. "*Pekmez*" (marmalade) is made of them.
- 27701 and 27702. *MESPILUS GERMANICA* L. Medlar.
27701. *Royal*.
27702. "*Vrlo kroupna moushmoula*." Very large variety.
Distribution.—In the woods of Greece and the Caucasus region, Asia Minor, and western Persia, also occasionally found in the countries of southern Europe, where it is probably introduced.
27703. *CYDONIA* sp. Quince.
"*Vranya*." Vranya is a town in southern Servia.

27704 to 27713.

From Hankow, China. Presented by Mr. A. Sugden.

Received April 14, 1910.

Seeds of the following; notes by Mr. Sugden:

27704. *CANAVALI GLADIATUM* (Jacq.) DC.
27705. *PISUM ARVENSE* L. Pea.
Field variety.
27706. *PISUM SATIVUM* L. Pea.
Field variety.
27707. *GLYCINE HISPIDA* (Moench) Maxim. Soy bean.
Yellow seeded.
27708. *GLEDITSIA SINENSIS* Lam.
"Grows to be a large tree. Pods used for washing clothes."
Distribution.—The provinces of Chihli, Kiangsue, and Chekiang in the Chinese Empire.
27709. *GYMNOCLADUS CHINENSIS* Baill.
"Soap is made from this by pounding the pod and is used for washing the person, as it is scented. The seed is used much as we use bluing. The leaf is said to be large and long."

See No. 26281 for previous introduction.

27704 to 27713—Continued.**27710.** *CUCURBITA PEPO* L.

"An ornamental orange gourd, deeply grooved, green at center of ends."

27711. *CUCURBITA PEPO* L.

"Similar to the above, but deep red."

27712. *LAGENARIA VULGARIS* Ser.

"Small, yellow gourd which hangs on the plant all winter. Has a fluffy white flower."

27713. *SOLANUM MAMMOSUM* L.

"Five-finger gourd, from Canton, has large, thorny leaves, and a deep-yellow fruit which lasts on the plant or when picked for a long time, and is both highly ornamental and quaint; there are four small fingers sticking out from the base, on which it is able to stand. The Chinese use it as an ornament. Size of fruit about 3 by 2 inches. Would probably require heat to fruit."

27714 to 27723.

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 20, 1910. Collected by him March 14, 1910.

Cuttings of the following:

27714 to 27719. *MORUS ALBA* L.

Obtained from the Experiment Station for Sericulture in Tiflis. Suitable for experiment in the mild-wintered semiarid sections of the United States.

27714. "(No. 475.) Variety *pendula*. An interesting variety of the weeping mulberry, making twigs often 10 feet long, which hang straight down. Very beautiful when grafted high, that is, from 10 to 20 feet above the ground. Of value as a cemetery and park tree." (*Meyer.*)**27715.** "(No. 476.) Variety *globosa*. An ornamental mulberry, having a dense globular head. May be grafted either high or low and can be used to advantage in gardens where somewhat formal outlines are to be preserved." (*Meyer.*)**27716.** "(No. 477.) Variety *pyramidalis*. A robust variety of mulberry, looking, at a distance, very much like a pyramidal poplar. Of value as a lining tree along paths and driveways in places where tall fastigiate trees are not wanted." (*Meyer.*)**27717.** "(No. 478.) Variety *latifolia*. A variety of mulberry having large leaves and bearing large, dark berries of good taste, ripening from the middle of June until the middle of September. Of value as an ornamental and fruit tree." (*Meyer.*)**27718.** "(No. 479.) Variety *italia*. A very large-leaved variety of mulberry, said to be of Japanese origin. The leaves are unlike other mulberries, being more or less lobed like *Papyrus papyrifera*. The trees are strong growers and may serve as ornamental shade trees, while the dark berries are of a pleasant taste." (*Meyer.*)**27719.** "(No. 480.) Variety *hispanica*. A mulberry bearing long, dark berries of a raspberry-like taste. Has large and heavy leaves and may serve as an ornamental tree in parks and gardens." (*Meyer.*)**27720.** *MORUS NIGRA* L.

From Tiflis, Caucasus, Russia. "(No. 481.) A native variety of mulberry bearing the name 'Ghar-tootâ.' Produces large, black berries of a fresh, sweet

27714 to 27723—Continued.

taste, from which excellent preserves can be made. It ripens from the end of July until the middle of September. The trees are apparently slow growers and do not occupy much room. Suggested as a fruit tree for the home garden in those sections of the United States where the winters are not too severe. Obtained from the Experiment Station for Sericulture in Tiflis." (Meyer.)

27721. POPULUS ALBA L.

From Tiflis, Caucasus, Russia. "(No. 482.) Variety *pyramidalis*. A tall-growing, very pyramidal poplar, having a very white trunk. Suitable for an avenue tree in the mild-wintered semiarid sections of the United States." (Meyer.)

27722. POPULUS ALBA L.

From Tiflis, Caucasus, Russia. "(No. 483.) Variety *Bolleana*. Came originally from Turkestan. Often confused with, yet distinct from, the variety *pyramidalis*. Quite resistant to canker, while the preceding number (S. P. I. No. 27721) is not. Much planted in and around Tiflis." (Meyer.)

27723. POPULUS sp.

From Tiflis, Caucasus, Russia. "(No. 484.) A tall poplar of very spreading habits, with silvery white bark. Grows very fast. Apparently a native of the Caucasus. A good park tree for the mild-wintered, semiarid regions of the United States." (Meyer.)

27724 to 27736. CITRUS AUSTRALASICA, S. P. I. No. 14993 × CITRUS AURANTIUM?, S. P. I. No. 2886.

Grown at the Department Greenhouse, Washington, D. C., under the supervision of Mr. G. W. Oliver, expert propagator. Numbered April 28, 1910.

"These plants resulted from crossing the finger lime (*Citrus australasica*) with the calamondin. (*C. aurantium* (?)).

"In general appearance the seedlings are intermediate between the two parents. In *C. australasica* the leaves are very small, the petioles being without wings. In the calamondin the winged petioles are quite pronounced. The leaves of the hybrids are much larger than those of *C. australasica*; the petioles of the hybrid, although small, are winged. The seed parent and also the pollen-bearing parent are said to be much hardier than any other edible oranges. It is proposed to use this hybrid in future crossing, both for the production of a hardy orange and also for stocks for the orange and other citrus fruits in the Gulf States.

"The seed from which the female parent was grown was presented to Prof. W. M. Hays, St. Anthony Park, Minn., by Mr. James Pink, Wellington Point, near Brisbane, Australia; this seed was given to the department by Prof. Hays in August, 1905. Mr. Pink says of this species:

"It is a fruit which I think capable of great improvement. Nothing has ever been attempted with it here, and I send you a few dried fruits which, I have no doubt, contain good seeds. The plant is a large shrub, very limited in its distribution. The fruit when well grown is from 3 to 4 inches long, of a bright orange-crimson color, and of excellent flavor."

"The pollen-bearing parent was received as *Citrus aurantium* (?) by the Department through Messrs. Lathrop and Fairchild in 1899, from Panama. It is said to have been introduced into Panama from Chile by Mr. Gerardo Lewis. Mr. Walter T. Swingle is of the opinion that it is the calamondin (*Citrus mitis*) of the Philippines." (Oliver.)

27737 and 27738. MEDICAGO SATIVA L.**Alfalfa.**

Plants growing at Arlington Experimental Farm, Va. Numbered spring of 1910.

"Two of four surviving plants from an alfalfa field near Weskan, Kans., 20 years old, the rest having succumbed to the extreme drought and encroachment of buffalo grass. These plants were obtained by me under Agrost. No. 42 and 43, summer of 1907." (*J. M. Westgate.*)

27739 to 27754. MEDICAGO FALCATA ♀ × SATIVA ♂.**Alfalfa.**

Hybrids between *Medicago falcata* and various strains and varieties of *Medicago sativa*. Parents selected and hybrids made by Messrs. J. M. Westgate and W. J. Morse at the Arlington Experimental Farm during the summer of 1908. Numbered spring of 1910.

27739. Agrost. No. 2111. (*Medicago falcata* [S. P. I. No. 20718] crossed with Peruvian alfalfa [Agrost. No. 2002] [S. P. I. No. 14972?].) First plant in row.

27740. Agrost. No. 2111. Second plant in row.

27741. Agrost. No. 2111. Third plant in row.

27742. Agrost. No. 2112. (*Medicago falcata* [Agrost. No. 2072] [S. P. I. No. 19534] crossed with *Medicago sativa* [Agrost. No. 18, a heavily seeded upright selection].) First plant in row.

27743. Agrost. No. 2113. (Same parent plants as Agrost. No. 2112.) First plant in row.

27744. Agrost. No. 2160. (*Medicago falcata* [S. P. I. No. 20718] crossed with *Medicago sativa* [S. P. I. No. 20775]). First plant in row.

27745. Agrost. No. 2161. (Same parent plants as Agrost. No. 2160.) First plant in row.

27746. Agrost. No. 2161. Second plant in row.

27747. Agrost. No. 2112. Second plant in row.

27748. Agrost. No. 2112. Third plant in row.

27749. Agrost. No. 2112. Fourth plant in row.

27750. Agrost. No. 2112. Fifth plant in row.

27751. Agrost. No. 2113. Second plant in row.

27752. Agrost. No. 2113. Third plant in row.

27753. Agrost. No. 2113. Fourth plant in row.

27754. Agrost. No. 2113. Fifth plant in row.

27764. ANDROPOGON SORGHUM (L.) Brot.**Sorgo.**

From Scott City, Kans. Purchased from Mr. J. K. Freed. Received April, 1910.

"Mr. Freed states that he has grown this variety for three or four years, but its origin is unknown to him. He finds it ten days earlier than ordinary *Amber* sorgo, but he plants a little more seed to the acre. In seed yield it outyields ordinary *Amber* fully 50 per cent. The following description is by Mr. Carleton R. Ball:

"'Stalk slender, 5½ to 6 feet tall; butts one-half inch to 1 inch in diameter; internodes long and slender; leaves 8 to 10; panicles well exerted, pyramidal to open oblong—the pyramidal rather sparse, the oblong more dense; rachis continuous; spikelets obovate; glumes straw colored, smooth to hairy; seeds rather obovate, pure white.'

"Mr. Ball further suggests that this may be identical with the variety cultivated many years ago under the name of '*White Seeded* or *White India*.'" (*C. V. Piper.*)

27765 to 27767.

From Mazatlan, Mexico. Presented by Dr. J. N. Rose, associate curator, Division of Plants, Smithsonian Institution, United States National Museum, Washington, D. C. Received April 23, 1910.

Seeds of the following; notes by Dr. Rose:

27765. BROMELIA sp.

(Rose No. 13982.)

27766. BROMELIA sp.

(Rose No. 13983.)

"These seem to represent different species. The fruit is sold in the market at Mazatlan."

27767. ACROCOMIA MEXICANA Karw.

"(Rose No. 13969.) A tall tree growing in low ground, fruit common in the markets in April and May. The fruits after being peeled are cooked in sugar and eaten by the poorer classes." (Rose.)

Distribution.—In damp woods along both coasts of tropical Mexico.

27768. PTEROCARYA FRAXINIFOLIA (Lam.) Spach.

From Elk Grove, Cal. Presented by Messrs. Tribble Bros., through Mr. Peter Bisset. Received April 28, 1910.

"An ornamental deciduous tree, attaining a height of 60 feet, of rapid growth, with spreading branches, graceful, dark-green foliage, decorated in summer and fall with the long, drooping racemes of light-green fruits. Is hardy as far north as Massachusetts. It thrives best in rich and moist soil, but also grows in drier localities. Propagated by seed and by layers and suckers." (*Extract from Bailey's Cyclopaedia of American Horticulture.*)

Distribution.—In woods in the regions bordering on the southern shores of the Black and Caspian seas and in the northern part of Persia.

27769 to 27775.

From Tiflis, Caucasus, Russia. Obtained from the Botanic garden by Mr. Frank N. Meyer, agricultural explorer. Received April 26, 1910.

Cuttings of the following:

27769. MALUS SYLVESTRIS Miller.

Apple.

From Tiflis, Caucasus, Russia. "(No. 488, Mar. 22, 1910.) A native Caucasian variety of apple, called '*Pschacha Chis.*' A winter apple excellently fitted for keeping and transport. Suitable for regions where dry and hot summers prevail." (Meyer.)

27770. PYRUS COMMUNIS L.

Pear.

From Tiflis, Caucasus, Russia. "(No. 492, Mar. 22, 1910.) A native Caucasian variety of pear, called '*Dilafruz.*' Suitable for regions like No. 488 (S. P. I. No. 27769)." (Meyer.)

27771. PRUNUS AVIUM L.

Cherry.

From Tiflis, Caucasus, Russia. "(No. 702, Mar. 22, 1910.) A native Caucasian variety of cherry, called '*Sari Gilaz.*' Fruits large, heart shaped, slightly compressed from the sides; color yellow; flesh light yellow, slightly translucent; taste sour-sweet; stone large, slightly oval, easily separated from pulp. Ripens at beginning of June. A very prolific bearer. Suitable for regions like No. 488 (S. P. I. No. 27769)." (Meyer.)

27769 to 27775—Continued.**27772. PUNICA GRANATUM L.****Pomegranate.**

From Tiflis, Caucasus, Russia. "(No. 706, Mar. 22, 1910.) A native Caucasian variety of pomegranate, called '*Schirin nar.*' Fruits of medium size, globular, compressed on the sides. Rind light red; flesh rosy white, sweet. A medium-prolific bearer." (*Meyer.*)

27773. PUNICA GRANATUM L.**Pomegranate.**

From Tiflis, Caucasus, Russia. "(No. 707, Mar. 22, 1910.) A native Caucasian variety of pomegranate, called '*Cumzi gabuch.*' Fruits very large; rind thick, red; flesh dark red, juicy, of sour-sweet taste; seeds large. A very prolific bearer. A sour-sweet sirup, called '*Nardashi,*' is prepared from the fruits with grape juice added." (*Meyer.*)

27774. PUNICA GRANATUM L.**Pomegranate.**

From Tiflis, Caucasus, Russia. "(No. 708, Mar. 22, 1910.) A native Caucasian variety of pomegranate, called '*Savalan Nar.*'" (*Meyer.*)

27775. ELAEAGNUS ANGUSTIFOLIA L.**Oleaster.**

From Tiflis, Caucasus, Russia. "(No. 709, Mar. 22, 1910.) One of the best and most prolific varieties, called '*Matna-pshat.*' Fruits large, nearly cylindrical in shape; color yellowish gray, sun side dark red. Skin very thin, easily peeled off from the fruit when fully ripe. Flesh light grayish yellow, tender, and sweet. Eaten fresh or dried as a dessert, also stewed in milk as an invigorating food, or boiled with sugar as a compote. Recommended as a fruit for the home garden in the mild-wintered, rather arid sections of the United States." (*Meyer.*)

27776. CITRUS BERGAMIA Risso.**Bergamot orange.**

From Bronte, Sicily. Presented by Mr. Charles Beek, manager for the Duke of Bronte. Received April 28, 1910.

See No. 25544 for previous introduction.

27777. FURCRAEA CABUYA INTEGR A Trelease.**Cabuya blanca.**

From San Ramon, Costa Rica. Received from Mr. G. C. Worthen, through Mr. Lyster H. Dewey, April 28, 1910.

"A fiber plant native in Central America and now beginning to be cultivated on large plantations in Costa Rica. It grows on the dry highlands, and in some places at altitudes of 8,000 feet. It is occasionally subjected to temperatures in the winter nearly as low as freezing. A fiber, similar in character to sisal, but whiter and somewhat stronger than the sisal from the henequen, is produced in the leaves. This fiber may be cleaned by the same kind of machinery as that used for sisal. The plant is recommended only for Porto Rico, Hawaii, and possibly the Florida Keys." (*Dewey.*)

27778. TRIPHASIA TRIFOLIATA (L.) DC.

From Mazatlan, Mexico. Presented by Dr. J. N. Rose, associate curator, Division of Plants, U. S. National Museum, Washington, D. C. Received April 23, 1910.

"Grown as an ornamental tree at Mazatlan; 20 feet high; flowers white, fragrant; fruit small, red." (*Rose.*)

See No. 21284 for previous introduction.

Distribution.—Native locality not known; naturalized and cultivated in India, Cochin China, and most other tropical countries.

27779 to 27788. CUCUMIS MELO L.**Muskmelon.**

From Greece. Presented by Mr. Alfred L. Crowe, British vice consul, Zante, Greece. Received April 20, 1910.

Seed of the following; notes and names by Mr. Crowe:

27779 to 27784. From Cephalonia.

27779. *Bekeeria.* Large
winter melon.

27782. *Good Cassaba.*

27783. *Black.*

27780. *Cassaba.*

27784. Winter melon.

27781. *Black Cassaba.*

27785 to 27788. From Zante.

27785. (No name.)

27787. Red.

27786. White.

27788. (No name.)

"Directions for planting.—The ground must be most carefully prepared (almost sifted) to a depth of about half a fathom (3 feet); then divided into 3-foot squares. In these squares horse dung or other pure animal manure, such as dung of goat or sheep, at least 2 years old, and well hand picked, is spread with the hand in each square at a depth of about 25 inches. Throw about 20 pounds of manure in each square and cover with a little earth, over which put another 10 pounds of manure and cover again with good earth. Plant the seed with the fingers at the depth of about 2 to 2½ inches. The best season for planting is the middle of April. Before planting the seed put it in thin muslin, well tied, and then in a plate or dish full of water, in which you leave it for about twenty-four hours to soak; then bury the seed, as it is in the muslin, in manure until it begins to sprout, when it is ready to plant."
(Crowe.)

27789 to 27790. CHRYSOPHYLLUM CAINITO L.**Star-apple.**

From Culebra, Canal Zone, Panama. Presented by Mr. Alfred Dyer. Received April 28, 1910.

"This seed is from the same variety, but from different localities." (Dyer.)

See No. 27572 for description.

27791. PRUNUS CERASUS MARASCA (Host) Schneider.**Maraschino cherry.**

From Dalmatia. Purchased from Mr. Ludwig Winter, Bordighera, Italy. Received May 2, 1910.

"The term '*Maraschino*' or '*Marasco*' is the name of a liquor which is distilled from cherries. This appears to be a well-known product in Dalmatia, and possibly also in other portions of southern Europe. The cherries used for this purpose are commonly known as '*Maraschino*' cherries. This name, also the names '*Marasquin*,' '*Marasca*,' and '*Marasco*,' are given by Le Roy, a leading French pomological authority, as synonyms of a variety the accredited name of which in France appears to be '*Griotte á Ratafia (Petite)*.' This name signifies a liquor made from small black cherries. Whether in popular usage the name '*Maraschino*' is applied to other varieties than this one does not appear." (H. P. Gould.)

"The exact botanical status of the Maraschino cherry is uncertain. It has been variously placed by different botanists, some considering it a form of *Prunus cerasus*, while others look upon it as a form of *P. acida*. Still others have classified it otherwise." (W. F. Wight.)

27792. ACACIA DECURRENS Willd.**Black wattle.**

From Berea, Durban, Natal, South Africa. Presented by Dr. J. Medley Wood, director, Botanic Garden. Received May 2, 1910.

Distribution.—Along river banks and on mountain slopes in the provinces of Queensland, New South Wales, Victoria, and South Australia in Australia, and in the island of Tasmania.

27793. CARICA PAPAYA L.**Papaya.**

From Tlacotalpan, Vera Cruz, Mexico. Presented by Mr. Edward Everest, Hda.

"La Candelaria." Received May 2, 1910.

"These seeds were taken from a very sweet, good fruit." (*Everest.*)

27794 to 27796. MEDICAGO spp.

From Paris, France. Presented by The Director, Paris Museum of Natural History, at the request of Mr. C. V. Piper. Received May 2, 1910.

Seed of the following:

27794. MEDICAGO CARSTIENSIS Wulfen.

Distribution.—In open grassy places or in thickets in the southern part of Austria, especially in Istria, Croatia, Bosnia, and Dalmatia.

27795 and 27796. MEDICAGO HISPIDA DENTICULATA (Willd.) Urban.

27797. ROLLINIA sp.

From Horqueta, Paraguay, South America. Presented by Mr. T. R. Gwynn. Received April 27, 1910.

"Chirimoya chica colorado. This is a small red fruit, growing on a bush, and to my taste the best of all the varieties." (*Gwynn.*) (Seed.)

27798. INGA EDULIS Mart.

From Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received May 6, 1910.

"This is known as *Ingá cipó*. 'Cipó' here is the word for liane, given to the fruit undoubtedly on account of its curious appearance and resemblance to a liane. It is from 1 foot to 2 feet in length and about the thickness of a man's thumb, or even thicker, usually twisted and crooked. The seeds are surrounded by a pulp in texture something like that of *Theobroma grandiflorum*. This pulp is acidulous, but has little flavor." (*Fischer.*)

Distribution.—Mexico, from the vicinity of Vera Cruz, southward through Central America to the valley of the Amazon in Brazil.

27801 to 27813.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 30, 1910.

Seeds of the following:

27801. HORDEUM sp.

Barley.

From Tiflis, Caucasus, Russia. "(No. 1302a, Mar. 20, 1910.) A sample of black winter barley used locally for horse feed (see S. P. I. No. 27829). Obtained from Mr. Eiranoff, secretary of the Agricultural Society in Tiflis." (*Meyer.*)

27801 to 27813—Continued.

27802. HALOXYLON AMMODENDRON (Meyer) Bunge.

Saxaul.

From Tiflis, Caucasus, Russia. "(No. 1303a, Mar. 22, 1910.) A tree or tall shrub resisting alkali and aridness to a most remarkable degree. In certain sections of central Asia it is practically the only tree to be found and its wood is much used for fuel. Recommended as a windbreak and a fuel supply for the desert regions of the southwestern part of the United States. Obtained from the Tiflis Botanic Garden, the only botanic garden in the world where a plantation of this remarkable tree exists." (Meyer.)

See S. P. I. No. 24555 for previous introduction.

27803. MEDICAGO SATIVA L.

Alfalfa.

From Erivan, Caucasus, Russia. "(No. 1304a, Mar. 28, 1910.) A robust form of alfalfa (Alfalfa passes here under the Tartar name 'Yondjin'). This variety may prove of value in the southern Rocky Mountain regions where the climate very much resembles that of Erivan. For general climatic information for this and other numbers from Erivan see note on Nos. 711 to 750 (S. P. I. Nos. 27611 to 27650)." (Meyer.)

27804. CITRULLUS VULGARIS Schrad.

Watermelon.

From Erivan, Caucasus, Russia. "(No. 1305a, Mar. 28, 1910.) Mixed local varieties reputed to be of fine quality. There are said to be red and yellow ones among these. To be tested under irrigation in the hot-summered, arid, and semiarid sections of the United States." (Meyer.)

27805. CUCUMIS MELO L.

Muskmelon.

From Erivan, Caucasus, Russia. "(No. 1306a, Mar. 28, 1910.) A celebrated local variety of muskmelon, called 'Dootma,' said to be very fine. To be tested like No. 1305a (S. P. I. No. 27804)." (Meyer.)

27806. CUCUMIS SATIVUS L.

Cucumber.

From Erivan, Caucasus, Russia. "(No. 1307a, Mar. 28, 1910.) A local variety of cucumber, half long, green, trained on stakes. To be tested like No. 1305a (S. P. I. No. 27804)." (Meyer.)

27807. RAPHANUS SATIVUS L.

Radish.

From Erivan, Caucasus, Russia. "(No. 1308a, Mar. 28, 1910.) A local variety of radish, large, round, and of bright-red color. A spring vegetable. To be tested like No. 1305a (S. P. I. No. 27804)." (Meyer.)

27808. RAPHANUS SATIVUS L.

Radish.

From Erivan, Caucasus, Russia. "(No. 1309a, Mar. 28, 1910.) A local variety of radish, large, long, and of white color. A spring vegetable. To be tested like No. 1305a (S. P. I. No. 27804)." (Meyer.)

27809. ALLIUM CEPA L.

Onion.

From Erivan, Caucasus, Russia. "(No. 1310a, Mar. 28, 1910.) A Caucasian variety of white winter onion, very sweet and rather solid. To be tested like No. 1305a (S. P. I. No. 27804)." (Meyer.)

27810. ABELMOSCHUS ESCULENTUS (L.) Moench.

Okra.

From Erivan, Caucasus, Russia. "(No. 1311a, Mar. 28, 1910.) A native Caucasian variety of okra, said to be fine. This vegetable passes here under the Tartar name of 'Pam-ya.' To be tested like No. 1305a (S. P. I. No. 27804)." (Meyer.)

27801 to 27813—Continued.**27811. LEPIDIUM SATIVUM L.**

From Erivan, Caucasus, Russia. "(No. 1312a, Mar. 28, 1910.) A native vegetable called in the Tartar language '*Kodim*,' apparently a broad-leaved variety of the garden cress. It is grown out in the open, on protected places, throughout the winter, and eaten raw as a salad with meats. Recommended as a winter green in the southern United States." (*Meyer*.)

27812. OCIMUM BASILICUM L.

From Erivan, Caucasus, Russia. "(No. 1313a, Mar. 28, 1910.) A Caucasian summer vegetable, called in the Tartar language '*Rahan*.'" (*Meyer*.)

Distribution.—Probably native in the Punjab regions of India; generally cultivated as a pot herb.

27813. SATUREJA HORTENSIS L.

From Erivan, Caucasus, Russia. "(No. 1314a, Mar. 28, 1910.) A Caucasian summer vegetable, said to grow only a few inches high, called in the Tartar language '*Marza*.'" (*Meyer*.)

Distribution.—The countries bordering on the Mediterranean; frequently cultivated in kitchen gardens.

27814 to 27829.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 28, 1910.

Seeds of the following:

27814. CICER ARIETINUM L.**Chick-pea.**

From Tiflis, Caucasus, Russia. "(No. 1273a, Mar. 19, 1910.) A variety of chick-pea, said to come from the vicinity of Gori, central Caucasus. There are apparently several strains in this lot. These chick-peas remain somewhat hard, even after being boiled a long time. See note on No. 1259a (S. P. I. No. 27513)." (*Meyer*.)

27815. CICER ARIETINUM L.**Chick-pea.**

From Tiflis, Caucasus, Russia. "(No. 1274a, Mar. 19, 1910.) A variety of chick-pea, said to come from Cacheti, central Caucasus. Considered a finer variety than the preceding and becomes quite soft when boiled. See note on No. 1259a (S. P. I. No. 27513)." (*Meyer*.)

27816. LENS ESCULENTA Moench.**Lentil.**

From Tiflis, Caucasus, Russia. "(No. 1275a, Mar. 19, 1910.) This lentil is eaten by the natives boiled in soup, and although small, is said to have a much finer taste than the large ones. In America this legume may perhaps be of value as a fodder or cover plant in the semiarid sections." (*Meyer*.)

27817. PHASEOLUS COCCINEUS L.

From Tiflis, Caucasus, Russia. "(No. 1276a, Mar. 19, 1910.) A large white bean, said to grow in Kherson Government, southwest Russia, where the climate is warm and rather dry in summer. These beans are much eaten by Jewish residents in Russia. To be tried in the semiarid sections of the United States." (*Meyer*.)

27818. PHASEOLUS VULGARIS L.

From Tiflis, Caucasus, Russia. "(No. 1277a, Mar. 19, 1910.) A round, yellow bean, said to be early; comes from the Kherson Government, southwest Russia. To be tried in semiarid sections of the United States." (*Meyer*.)

27814 to 27829—Continued.

27819. *PHASEOLUS VULGARIS* L.

From Tiflis, Caucasus, Russia. "(No. 1278a, Mar. 19, 1910.) A round, white bean, said to be very productive; comes from the Kherson Government in southwest Russia. To be tried in semiarid sections of the United States." (*Meyer.*)

27820. *PHASEOLUS VULGARIS* L.

From Tiflis, Caucasus, Russia. "(No. 1279a, Mar. 19, 1910.) A small, white bean; comes from the Kherson Government, southwest Russia. Much eaten by Jewish residents in Russia. To be tried in semiarid sections of the United States." (*Meyer.*)

27821. *PHASEOLUS VULGARIS* L.

From Tiflis, Caucasus, Russia. "(No. 1280a, Mar. 19, 1910.) A long, white bean, native to this section of the Caucasus. To be tried in semiarid sections of the United States." (*Meyer.*)

27822. *PHASEOLUS VULGARIS* L.

From Tiflis, Caucasus, Russia. "(No. 1281a, Mar. 19, 1910.) A round, speckled bean, native to the Caucasus and often seen exposed for sale. To be tried in semiarid sections of the United States." (*Meyer.*)

27823. *PHASEOLUS VULGARIS* L.

From Tiflis, Caucasus, Russia. "(No. 1282a, Mar. 19, 1910.) A long, speckled bean, native to the Caucasus. To be tried in semiarid sections of the United States." (*Meyer.*)

27824. *PHASEOLUS VULGARIS* L.

From Tiflis, Caucasus, Russia. "(No. 1283a, Mar. 19, 1910.) A handsome, long, red bean. An old native Caucasian variety said to come from Vladikavkas. Very much liked by the natives who use beans in summer instead of meats. To be tried in semiarid sections of the United States." (*Meyer.*)

27825. *PHASEOLUS VULGARIS* L.

From Tiflis, Caucasus, Russia. "(No. 1284a, Mar. 19, 1910.) A round, thick, dark-red bean, native to the Caucasus. Much eaten by the native population. To be tried in semiarid sections of the United States." (*Meyer.*)

27826. *PHASEOLUS VULGARIS* L.

From Tiflis, Caucasus, Russia. "(No. 1285a, Mar. 19, 1910.) A flat, red bean, native to the Caucasus. To be tried in semiarid sections of the United States." (*Meyer.*)

27827. *PANICUM MILIACEUM* L.

From Tiflis, Caucasus, Russia. "(No. 1291a, Mar. 22, 1910.) A large-grained, white proso, considered to be the best variety in Tiflis. To be tested in regions with a limited rainfall. Purchased in Tiflis." (*Meyer.*)

27828. *PANICUM MILIACEUM* L.

From Tiflis, Caucasus, Russia. "(No. 1292a, Mar. 22, 1910.) A reddish proso, said to be very drought resistant. Purchased in Tiflis, in the vicinity of which it grows. To be tried in semiarid regions." (*Meyer.*)

27829. *HORDEUM VULGARE NIGRUM* (Willd.) Beaven. **Black barley.**

From Tiflis, Caucasus, Russia. "(No. 1301a, Mar. 23, 1910.) This is grown in the vicinity of Tiflis, mostly as a winter grain, and extensively used as a feed for horses instead of oats, as the last do not grow well in the Caucasus. This barley is generally soaked over night before being fed to the animals." (*Meyer.*)

27830 to 27838. MANGIFERA INDICA L.**Mango.**

Grown at the Department Greenhouse, Washington, D. C. Numbered May 3, 1910.

Plants of the following seedling Philippine mangos, selected for propagation by grafting, for distribution and testing, to determine how nearly these varieties come true from seed:

27830 and 27831. *Carabao*. Grown from S. P. I. No. 25938.

27832 to 27834. *Pico*. Grown from S. P. I. No. 25939.

27835 to 27838. *Lyon*. Grown from S. P. I. No. 25940, which was introduced under the class name of *Pahutan*.

27839 to 27842.

From Callao, Peru, South America. Presented by Rev. V. M. McCombs. Received May 5, 1910.

27839. *SOLANUM* sp.

Potato.

Yellow.

(Tubers.)

27840 and 27841. *ANONA CHERIMOLA* Miller.

Cherimoya.

27840. (Seeds.)

27841. (Cuttings.)

27842. *LUCUMA* sp.

(Seeds.)

27843 to 27845.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 3, 1910.

27843. *IRIS* sp.

From near Helenendorf, Caucasus, Russia. "(No. 769, Apr. 8, 1910.) An iris, perhaps *I. paradoxa*, found on a dry, stony mountain slope, and growing but a few inches high. May be of value as a low-growing edging plant in semiarid regions." (Meyer.)

(Rhizomes.)

27844. *GLADIOLUS SEGETUM* Gawl.

From near Geok-Tepe, Caucasus, Russia. "(No. 770, Apr. 12, 1910.) A wild gladiolus occurring on dry mountain slopes. To be tested in breeding experiments." (Meyer.)

(Bulbs.)

Distribution.—From the Madeira and Canary Islands eastward through northern Africa and southern Europe to Persia and Turkestan.

27845. *TULIPA EICHLERI* Regel.

From near Geok-Tepe, Caucasus, Russia. "(No. 771, Apr. 12, 1910.) An ornamental species of tulip having large, bright-red flowers that stand on long stems. Found growing on dry places in the mountains at several hundred feet elevation." (Meyer.)

Distribution.—In the vicinity of Baku in the Transcaucasian region and in the Kohrud Mountains of northern Persia.

27846 and 27847. MALUS SYLVESTRIS Miller.**Apple.**

From Santa Ines, Chile. Presented by Mr. Salvador Izquierdo. Received May 2, 1910.

Cuttings of the following:

27846. *Admirable de Otono de Santa Ines*. "This tree produces a large fruit, somewhat flattened; color green, inclined to yellow, with vertical, reddish stripes; fruit sweet, acidulous, juicy, and very aromatic; an excellent variety; ripens here at the end of April. The tree is very vigorous and absolutely unattackable by the woolly aphid. I consider it an excellent market fruit." (Izquierdo.)

27846 and 27847—Continued.

27847. *Huidobro.* "This is known, also, to the few people who have it, as *Araucana*. It is, perhaps, the most valuable winter apple, since it is absolutely immune to the woolly aphis and other pests. It is a vigorous and prolific tree, produces a large uniformly golden-yellow fruit, which keeps until October or November in Chile. Of very characteristic taste and consistency, such as is found in no other apple of the collection at Santa Ines. It will be of great value for the planting of commercial orchards, as its fruit is firm and ships well. The horticulturist who created this variety thinks he has made a valuable addition to our fruit trees. It originated from an Italian seed sown in Chile at 'Principal,' the estate of Señor Vicente G. Huidobro." (*Extract from Publicaciones de la Estacion de Patologia Vegetal de Chile, No. 3. El Pulgon Lanijero de los Manzanos by Gaston Lavergne. p. 6.*)

27848 and 27849. MANGIFERA INDICA L.**Mango.**

From Kingston, Jamaica. Purchased from the Tangle Fruit Co., Mr. Aston W. Gardner, manager. Received May 5, 1910.

Seeds of the following:

27848. *Maharajah.* "Fruit roundish oblique, flattened, $4\frac{1}{8}$ by $3\frac{3}{16}$ by $2\frac{7}{8}$ inches. Cavity shallow, with a distinct suture extending 2 inches from stem. Beak, medium, about 1 inch from end of fruit. Surface, moderately smooth, some fine undulations. Color, greenish yellow, shading to rich yellow. Dots, very numerous, yellow. Skin, thick, tenacious. Flesh, rich yellow, tender, but very fibrous. Flavor, sweet, pleasant quality, if fiber was not so abundant would be good. Seed, flat, oval, covered with a dense coat of fiber, medium size 3 by $1\frac{1}{8}$ by $7/8$ inch." (*William A. Taylor.*)

27849. *Mangalore.* "Fruit oblong, oblique, flattened, $4\frac{1}{16}$ by $3\frac{5}{8}$ by $2\frac{5}{8}$ inches. Cavity, shallow, small furrows without suture. Stem, very slender, with bracts. Beak, small, one-sixteenth inch above general surface, seven-eighths inch from end center. Surface, moderately smooth. Color, yellow, with marblings of green. Dots, numerous, yellow. Skin, thick, tenacious. Flesh, deep yellow, tender except for fiber, juicy. Flavor, mild, subacid, quality good. Seed, flat, oval, $3\frac{1}{2}$ by $2\frac{1}{8}$ by $7/8$ inch." (*William A. Taylor.*)

27850 to 27855.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received May 6, 1910.

Seeds of the following:

27850. *DIOSPYROS* sp.

"Mambolo."

27851. *GUSTAVIA* sp.

27852. *MIMUSOPS CORIACEA* (DC.) Miq.

Distribution.—In woods on the islands of Madagascar and Mauritius.

27853 to 27855. *MANGIFERA INDICA* L.

Mango.

27853. *Auguste.*

27855. José.

27854. *Cuiller.*

27856 to 27858. CITRULLUS VULGARIS Schrad.**Watermelon.**

From Roumania. Procured by Mr. Horace G. Knowles, formerly American consul at Bucharest, now American minister resident and consul general, Santo Domingo, Dominican Republic. Received February 25, 1910.

27856 to 27858—Continued.

Seeds of the following; notes taken from the sacks:

27856. "*Rattlesnake Junior*. Small, striped, oval; meat dark pink."

27857. "*Carmen Sylva*. Meat perfectly white."

27858. "*Princess Marie*. I am sure this is seed of the dark-green skin and dark-red meat variety, the kind most grown in Roumania."

27859 to 27872. VIGNA UNGUICULATA (L.) Walp. Cowpea.

From Monetta, S. C. Grown by Mr. J. M. Johnson, crop of 1909. Numbered for convenience in recording distribution May 7, 1910.

Seeds of the following:

27859 to 27861. Hybrids between *Iron* and *Black*.

27859. (P. B. No. 14a4-1-3-1.) **27861.** (P. B. No. 14a8-5-

27860. (P. B. No. 14a4-1-3-4.) 3-1.)

27862 to 27866. Hybrids between *Iron* and *Large Blackeye*.

27862. (P. B. No. 17b2-2-1.) **27865.** (P. B. No. 17b2-2-4.)

27863. (P. B. No. 17b2-2-2.) **27866.** (P. B. No. 17c2-2-2.)

27864. (P. B. No. 17b2-2-3.)

27867 to 27871. Hybrids between *Iron* and *Whippoorwill*.

27867. (P. B. No. 18b1-2-3.) **27870.** (P. B. No. 18b5-1-2.)

27868. (P. B. No. 18b1-2-4.) **27871.** (P. B. No. 18b9-1-1.)

27869. (P. B. No. 18b5-1-1.)

27872. *Iron*.

27873. SAPIUM JENMANI Hemsl.

From Georgetown, Demarara, British Guiana. Presented by Mr. F. A. Stockdale, assistant director and Government botanist, Science and Agriculture Department, Botanic Gardens. Received May 5, 1910.

"A rubber-producing plant, that should be planted in a humid situation, shaded from the wind. It does best here in well-drained, fully cleared clayey-peaty land some distance up the rivers, and is making most excellent growth at our experiment stations. In heavy clay soils, exposed to wind, this plant does not grow luxuriantly, developing into a shrubby bush very liable to attacks from *Lecanium* scale." (*Stockdale*.)

"A tall forest tree growing in the low, warm forests of British Guiana and said to be the principal, if not the only, source of the rubber exported from that colony. This rubber has a wonderful elasticity and fetches the highest prices in the English markets. It is extracted as *scrap* by the native Indians. This tree might be grown with good results in the Philippine Islands." (*H. Pittier*.)

Distribution.—In the alluvial forests of the Pomeroon district of British Guiana.

27874. (Undetermined.)

From Horqueta, Paraguay, South America. Presented by Mr. T. R. Gwynn. Received May 6, 1910.

"*Ymangazu*, Paraguay rubber seed." (*Gwynn*.)

27875 and 27876. TRITICUM spp.**Wheat.**

From the plains of Thebes near the colossi of Memnon, Egypt. Presented by Mr. A. J. Perkins. Received April 29, 1910.

Seeds of the following:

27875. Small, dark kernels.

27876. Large, white kernels.

27877 to 27887.

From Malkapur, Berar, India. Presented by Mr. A. S. Dhavale, care of Mr. V. B. Savaji. Received April 30, 1910.

Seed of the following. Unless otherwise stated, notes by Mr. Dhavale.

27877 to 27879. ANDROPOGON SORGHUM (L.) Brot.

Durra.

"*Juar*. The chief food and fodder crop of this section."

27877. "One of the inferior kinds."

"A form of durra with obovate white seeds of medium size, about equaled by the transversely wrinkled glumes which are coriaceous and black at the base, greenish white and papery above the transverse shoulder." (*Carleton R. Ball.*)

27878. "The best and superior kind."

"A form of durra with rather large, broadly obovate or subrotund, pearly-yellow seeds which exceed the coriaceous, greenish-yellow glumes which are transversely wrinkled and often dark in color below the wrinkle." (*Carleton R. Ball.*)

27879. "One of the inferior kinds."

"Apparently similar to No. 27877, but the seeds are rather larger and the outer part of the glumes more coriaceous." (*Carleton R. Ball.*)

27880 and 27881. CROTALARIA spp.

"*Bichawa*. A wild legume for green manuring."

27880. CROTALARIA JUNCEA L.

See No. 26356 for description.

27881. CROTALARIA sp.

"The rare kind."

27882 and 27883. DOLICHOS LABLAB L.

Bonavist bean.

27882. "*Val*. Blackish green, short pod. A garden vegetable crop, also used for green manure."

27883. "*Val*. White, short pod. A garden vegetable crop also used for green manure."

27884. LATHYRUS SATIVUS L.

"*Lakha*. A leguminous fodder and food crop."

27885. PENNISETUM AMERICANUM (L.) Schum.

Pearl millet.

"*Bajra*. The secondary food and fodder crop."

27886. PHASEOLUS ACONITIFOLIUS Jacq.

"*Matha*. A leguminous fodder and food crop."

27887. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

"*Val*. White, long pod. A garden vegetable crop, also used for green manuring."

27903. SOLANUM ETUBEROSUM Lindl. (?)

From near the baths of Chillian, Chile, at an altitude of about 2,200 metres above sea level. Received through Mr. José D. Husbands, Limavida, Chile, May 2, 1910.

"A friend of mine procured these seeds from a plant which, he says, is very much like a potato. The tubers could not be obtained, as they were growing in the dirt, within the crevices of rocks, very deep down. This may possibly be *Solanum etuberosum*." (*Husbands*.)

27904 to 27924. CRYPTOCARYA RUBRA (Mol.) Skeels.

From central Chile. Received through Mr. José D. Husbands, Limavida, Chile, May 12, 1910.

"Seeds of different strains of this tree each showing some variation in fruit, leaf, growth, etc." (*Husbands*.)

Distribution.—Found in the woods and along streams, in the vicinity of Antuco, in central Chile.

See Nos. 23897 and 24310 for previous introductions.

27925. QUERCUS CORNEA Lour.**Oak.**

From Hongkong, China. Purchased from Mr. W. J. Tutchter, superintendent, Botanical and Forestry Department. Received at the Plant Introduction Garden, Chico, Cal., April, 1910.

See No. 10633 for description.

(Seed.)

Distribution.—In the vicinity of Hongkong and Hainan in China, in the province of Tongking in Cochin China, and in the islands of Borneo and Java.

27926 to 27928. MANGIFERA INDICA L.**Mango.**

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received May 12, 1910.

Seed of the following:

27926. Aristide. "The best of our mangos." (*Regnard*.)

27927. Baissac.

27928. Maison Rouge.

27929. FLACOURTIA RAMONTCHI L'Herit.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received May 12, 1910.

See No. 26655 for previous introduction.

(Seeds.)

27930. VIGNA UNGUICULATA (L.) Walp.**Cowpea.**

From Atlanta, Ga. Purchased from Messrs. H. G. Hastings & Co. Received May 11, 1910.

"*The Quick pea*.—This is strictly a new variety found by us in the hands of an Atlanta market gardener. We call it the Quick pea, because it is the quickest in market. It is of rather low, bushy growth, but every pod is ripened up above the foliage, long stems being thrown up. Every pod grows entirely in the sun. It makes quick, plenty of long, slender, meaty, fine-flavored pods for use as snaps, coming in before anything else. Three crops a year can be grown." (*Hastings's Catalogue No. 37, Spring, 1909.*)

27931. ALYSICARPUS VAGINALIS (L.) DC.

From Alabang Riyal, Philippine Islands. Presented by Mr. Le Roy J. Fattey at the request of Mr. J. B. Thompson, Special Agent in Charge, Agricultural Experiment Station, Island of Guam. Received May 6, 1910.

Known in the Philippine Islands as "*Manimanian*."

See No. 26786 for description.

27932. RHEEDIA EDULIS (Seem.) Planch. & Triana. Sastra.

From Puerto Mutis, Republic of Panama. Presented by Mr. W. M. Morse, Boston Panama Company, at the request of Mr. H. F. Schultz. Received May 12, 1910.

See No. 27485 for description.

27933. HORDEUM sp. Barley.

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, April 28, 1910.

White seeded.

NOTE.—This was picked out of a lot of black-seeded barley received under Meyer No. 1301a (S. P. I. No. 27829). See this number for remarks.

27934. GOSSYPIUM sp. Cotton.

From Unsan, Korea. Presented by Mr. J. D. Hubbard. Received May 16, 1910.

"This seed was all grown north of the fortieth parallel, and is probably the hardiest cotton in existence. On favorable soil in Korea this plant grows waist high and has many pods; these are not gathered until the bush has been killed by frost in late October or November. This variety has undoubtedly gained in hardiness during the ages it has been planted by the northern Koreans. The main article of clothing among the Koreans is the cotton suit, made from this home product." (*Hubbard*.)

27935. OPUNTIA sp.

From Manila, Philippine Islands. Presented by Mr. W. S. Lyon. Received May 17, 1910.

"An absolutely spineless opuntia. I fancy it is not indigenous, because I have only found it about habitations. I will warrant it with never a rudimentary spine. It is a 'buster' for size, makes a woody caudex as thick as a man's thigh, grows 11 to 13 feet tall and of like diameter of crown. For such things as might eat it, it would, I should think, crop a modest 200 tons or so per acre." (*Lyon*.)

27936. ZEA MAYS L. Corn.

From Guadalajara, Mexico. Procured by Hon. Samuel E. Magill, American consul. Received May 18, 1910.

Jala.

27937 to 27946. ZEA MAYS L. Corn.

From Guerrero, Mexico. Procured by Mr. Marion Letcher, American consul at Acapulco, Mexico. Received May 16, 1910.

Seeds of the following; descriptive notes as given by Mr. Letcher:

27937. Conejo Blanco. "Average length of ears $5\frac{1}{2}$ inches, average gross weight of ears 95 grams, average weight of cob 15 grams, net weight of corn on ear 80 grams. This corn is planted at the beginning of the rainy season for quick maturity. The crop can be gathered forty to fifty days after planting."

27937 to 27946—Continued.

27938. *Morado Breve*. Average length of ear 5 inches, average gross weight of ear 54 grams, average weight of cob 11 grams, average net weight of corn to ear 43 grams. As will be noted by the weights given above, the ears are very small. The grains are also very small and dark purple in color. It is planted as soon as the rains commence in June, and is gathered in forty or fifty days from time of planting."

27939. *Escorpioncillo*. "Average weight per ear, gross, 125 grams, average weight of cob 20 grams, average net weight of corn to ear 105 grams, average length of ear 7 inches. This is also an early maturing variety, but requires about ten days more than the two preceding."

27940. *Zapalote morado* or *Bandeno*. "Average length of ear $7\frac{1}{2}$ inches, average gross weight 190 grams, average weight of cob 33 grams, average net weight of corn to ear 157 grams. Matures about seventy days after planting. Makes a fine forage crop because of the number and size of blades."

27941. *Zapalote Blanco*. "Average length per ear 7 inches, average gross weight 170 grams, average weight of cob 29 grams, average net weight of corn to ear 141 grams. Same as the preceding except that it has somewhat smaller ears and fewer blades."

27942. *Olot Colorado*. "Average length of ear $6\frac{1}{2}$ inches, average gross weight of corn 148 grams, average weight of cob 30 grams, average net weight of corn to ear 118 grams. The term 'Colorado' (red) refers to the color of the cob. This variety matures in eighty days after planting."

27943. *Olotillo*. "Average length of ear 6 inches, average gross weight of ear 110 grams, average weight of cob 15 grams, average net weight of corn to ear 95 grams. Matures in ninety days."

27944. *Maizon*. "Average length of ear $7\frac{1}{2}$ inches, average gross weight of ear 150 grams, average weight of cob 24 grams, average net weight of corn to ear 126 grams. Matures in ninety days. Resembles the preceding but give a stronger and heavier plant. Yield per plant larger than any other plant described."

The preceding numbers were grown on the "La Luz" hacienda, of which Uruñuela Hermanos of this place are the proprietors.

27945. *Magueyano*.

27946. *Laguneno*.

"These two varieties were presented by Mr. Carlos Miller, Cuajiniquilapa, Guerrero, but without any descriptive notes. Mr. Miller is one of the most progressive farmers of the State, and the two samples submitted doubtless represent the best varieties planted on his lands."

27949. POLYGONUM TINCTORIUM Lour.

From Yokohama, Japan. Purchased from Yokohama Nursery Company. Received May 16, 1910.

"Introduced for trial as a nectar-producing crop to be grown on waste lands, in cooperation with the Bureau of Entomology, also for testing as a tannin plant." (R. A. Young.)

Distribution.—The provinces of Shingking, Szechwan, and Kwangtung, in the Chinese Empire; near Seoul in Korea, and commonly cultivated in Japan.

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27950. SAPINDUS SAPONARIA L.

From Vera Cruz, Mexico. Presented by Mr. William W. Canada, American consul at Vera Cruz. Received May 19, 1910.

"This berry-like fruit grows in clusters like the grape, and a tree will have at one time as many as one hundred of these clusters. The tree generally attains a height of from 10 to 15 feet and is very leafy and spreading. They abound in the vicinity of Vera Cruz, where the fruit is known by the name of '*Jaboncillo*.'

"The remarkable saponaceous properties of the fruit would warrant one to believe that it may possess a commercial value. If one of the berries be cut open by passing a sharp knife around its middle, a black, hard seed will drop therefrom, and the pulp and shell are the parts that appear to contain the soapy properties. When rubbed upon a wet hand, a good cleansing lather is immediately formed, one that to all appearances has been produced by ordinary soap." (*Canada*.)

27951. VACCINIUM VITIS-IDAEA MINOR Lodd. Mountain cranberry.

From Charlottetown, Prince Edward Island, Canada. Procured through Mr. Frank Deedmeyer, American consul. Received May 19, 1910.

See No. 26420 for previous introduction.

27952 to 27954.

From Honolulu, Hawaii. Procured by Mr. J. E. Higgins, horticulturist, Agricultural Experiment Station. Received May 18, 1910.

27952 and 27953. VACCINIUM RETICULATUM Smith.

Ohelo.

27952. (Root cuttings.)

27953. (Seeds.)

"A shrub closely related to the blueberries of the eastern United States, but bearing a larger berry of a light-red color. The fruit is described as edible, though somewhat astringent. Preserves and jelly are made from it. The plant is celebrated in the native song and ceremonial of Hawaii because of the beauty of its berries and the occurrence of the bush on high mountain summits. These roots and seeds have been imported for use in experiments on the domestication of the blueberry." (*Frederick V. Coville*.)

Distribution.—In woods on the upper slopes of the mountains in the Hawaiian Islands.

27954. CLAUCEA LANSIUM (Lour.) Skeels.

"The trees which I have seen in Hawaii are about 18 to 20 feet high and bear quite freely, their fruits are about the size of a cherry, and straw yellow in color, very much like the longan. The fruit is very highly prized by the Chinese." (*Higgins*.)

See No. 25546 for previous introduction.

27955. EUPHORBIA RESINIFERA Berg.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received May 23, 1910.

"This is a cactuslike plant of the mountainous parts of Morocco, furnishing the gum resin known to the crude drug market as euphorbium. In the month of September, after the rains have set in, the plant becomes very full of a milky sap contained in numerous unbranched latex tubes. The plants are slashed with cutting apparatus, and the milky juice, exuding in quantity, dries on the surface of the plant in irregular masses. These are torn off by the natives and shipped to commercial centers from the ports of Morocco. Owing to the irritating character of the material,

27955—Continued.

the natives protect the mouth and nose with cloths while working on this product.”
(*R. H. True.*)

Distribution.—The lower slopes of the Atlas Mountains in Morocco.

27956. GOSSYPIUM BARBADENSE L.**Cotton.**

From Trujillo, Honduras. Presented by Mr. T. S. Chaffee, through Dr. J. N. Rose, Associate Curator, Division of Plants, U. S. National Museum, Washington, D. C. Received May 23, 1910.

“A sample of sea island cotton grown here from seed planted the latter part of August, 1909. The stalk measured 10½ feet in height and bore 78 bolls and 6 blossoms.”
(*Chaffee.*)

27957. FEIJOA SELLOWIANA Berg.**“Guayuba.”**

From Salto, Uruguay. Presented by Mr. John J. C. Williams. Received May 23, 1910.

For description see S. P. I. Nos. 26120 and 26121.

27958. ROYENA PALLENS Thunb.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burt Davy, Government agrostologist and botanist. Received May 23, 1910.

“*Blaauw-bosch.* A bush growing in the semitropical and southwestern districts of the Transvaal, the fruit of which is said to be edible.” (*Davy.*)

Distribution.—Along the margins of the woods in southern Africa, extending from Lower Guinea and the Mozambique district southward to the Cape, rising to an elevation of 5,000 feet in Natal.

27959. CACARA EROSA (L.) Kuntze.

From Tampico, Mexico. Presented by Dr. Edward Palmer. Received May, 1910.

“*Jicama de Agua.* This is the finest and most valued variety, because of the agreeable water it affords. Travelers carry a supply of the roots as a substitute for water. This winter it was for sale at many street corners.” (*Palmer.*)

See No. 22971 for previous introduction.

27960. CANNABIS SATIVA L.**Hemp.**

From Gumma Prefecture, Japan. Purchased from the Yokohama Nursery Company, Yokohama, Japan. Received May 21, 1910.

A large variety of hemp, said to be 10 feet long.

27961 to 27968.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 18, 1910.

Cuttings of the following:

27961. PUNICA GRANATUM L.**Pomegranate.**

From near Yelisavetpol, Caucasus, Russia. “(No. 753, Apr. 6, 1910.) A variety of pomegranate called in the Tartar language ‘*Kizil Kabuch.*’ Fruits very large, sometimes 5 inches in diameter, of bright-red color; flesh of sour-sweet taste. Ripens in October and keeps for about four months. Obtained from the Vohrer Estate, Karaji.

“Yelisavetpol is famous for its pomegranates, which are said to be of finer quality than any place else in the Caucasus.” (*Meyer.*)

27961 to 27968—Continued.**27962. PUNICA GRANATUM L.****Pomegranate.**

From near Yelisavetpol, Caucasus, Russia. "(No. 754, Apr. 7, 1910.) The wild pomegranate which grows everywhere in the eastern part of the Caucasus and stands drought, heat, sterility of soil, etc., to a remarkable degree. The fruits are small and sour, but their juice can be used as a digestive seasoning with meats and game. Recommended as a hedge plant in mild-wintered, semiarid regions." (Meyer.)

27963. VITIS VINIFERA L.**Grape.**

From Yelisavetpol, Caucasus, Russia. "(No. 761, Apr. 5, 1910.) A tall grape of local origin, called '*Tavris*' (synonyms *Handja Gandja* and *Blanc de Gangin*). Bunch medium large; berries round, medium size, of a pale-yellow color, very sweet; skin slightly hard. A very good shipper and keeper, being seen on the market until early summer." (Meyer.)

27964. VITIS VINIFERA L.**Grape.**

From Yelisavetpol, Caucasus, Russia. "(No. 762, Apr. 5, 1910.) A native Caucasian grape called '*Achshira*' (Tartar), passing, however, with the German settlers in the Caucasus under the name of '*Ronde Weisse*.' Bunches medium large; berries medium size, round, white in color. Phenomenally productive. Gives a light white wine of good quality. Very much planted in this vicinity, seeming to prefer a rather heavy soil." (Meyer.)

27965. PUNICA GRANATUM L.**Pomegranate.**

From Geok-Tepe, Caucasus, Russia. "(No. 765, Apr. 12, 1910.) A pomegranate of apparently local distribution, called '*Valas*.' Fruits very large, of rosy-red color, very juicy and of sour-sweet taste. Considered a very fine variety. Obtained from Mr. A. Shelkovnikoff." (Meyer.)

27966. PUNICA GRANATUM L.**Pomegranate.**

From Geok-Tepe, Caucasus, Russia. "(No. 766, Apr. 12, 1910.) A pomegranate called '*Kyrmisi Kabugh*.' Fruits large, bright red, of sour-sweet taste. Obtained from Mr. A. Shelkovnikoff. Perhaps the same as No. 707 (S. P. I. No. 27773)." (Meyer.)

27967. PUNICA GRANATUM L.**Pomegranate.**

From Geok-Tepe, Caucasus, Russia. "(No. 767, Apr. 12, 1910.) A pomegranate called '*Shirin nar*.' For description see No. 706 (S. P. I. No. 27772), which is the same. Obtained from Mr. A. Shelkovnikoff." (Meyer.)

27968. MALUS PUMILA Miller.**Paradise apple.**

From Geok-Tepe, Caucasus, Russia. "(No. 768, Apr. 11, 1910.) A bushy apple, apparently rarely growing over 5 feet in height. A native of the Caucasus, from whence it was probably introduced into western Europe, where it is now so extensively used as a dwarfing stock for apples. This shrubby apple produces red fruits of fair quality, is very drought resistant, and stands high summer temperatures. May be used in hybridization work and in creating a strain of bush apples." (Meyer.)

Distribution.—Cultivated and naturalized in central and eastern Europe and in western Asia.

27969. SICANA ODORIFERA (Vell.) Naud.**Cassabanana.**

From Guatemala. Presented by Capt. A. F. Lucas.

Received May 21, 1910.

27969—Continued.

See No. 11720 for previous introduction.

Distribution.—From southern Mexico and Guatemala southeastward to the province of Sao Paulo in Brazil, and in the West Indies.

27970 to 27977.

From Cambridge, England. Presented by the Director of the Botanic Gardens, Cambridge University. Received April 22, 1910.

Seed of the following:

27970. *CHAETOCLOA MACROSTACHYA* (H. B. K.) Scribn. & Merrill.

Distribution.—In dry soil from Texas southward through Mexico and Central America to Brazil.

27971. *CHAETOCLOA* sp.

27972. *MELILOTUS DENTATA* (W. & K.) Pers.

27973. *MELILOTUS INDICA* (L.) All.

27974 to 27976. *PISUM ARVENSE* L.

Pea.

27977. *PISUM SATIVUM UMBELLATUM* L.

27978. STIZOLOBIMUM sp.

From Tamsui, Formosa. Presented by Mr. Samuel C. Reat, American consul. Received May 24, 1910.

27979. MEDICAGO SATIVA L.

Alfalfa.

From between Dushet and Passanaura, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 20, 1910.

“(No. 1333a, Apr. 30, 1910.) A small-leaved variety growing in stony débris that has been washed from the mountain sides. Found at an elevation of between 4,000 and 5,000 feet above sea level. Roots sent under No. 777 (S. P. I. No. 28043); see this number for further description.” (*Meyer.*)

27980 to 27995.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 21, 1910.

Seeds of the following:

27980. *MEDICAGO SATIVA* L.

Alfalfa.

From Erivan, Caucasus, Russia. “(No. 1315a, Mar. 28, 1910.) An alfalfa, passing locally under the Tartar name ‘*Yondjin*.’ This lot is supposed to be a more drought-resistant strain than No. 1304a (S. P. I. No. 27803), but as statements from native dealers can not be depended on, it may not be so. In Yelisavetpol I was informed that Erivan alfalfa lasts ten years, while Turkestan alfalfa lasts only six. In case this should be so it makes this a much more valuable forage plant than the central Asian strains. See also remarks under No. 1304a (S. P. I. No. 27803), which is probably the same.” (*Meyer.*)

27981. *MEDICAGO SATIVA* L.

Alfalfa.

From near Yelisavetpol, Caucasus, Russia. “(No. 1316a, Apr. 8, 1910.) An alfalfa found along the banks of a dry river bed. Roots sent under No. 763.” (*Meyer.*)

27980 to 27995—Continued.

27982. *MEDICAGO SATIVA* L.

Alfalfa.

From near Yelisavetpol, Caucasus, Russia. "(No. 1317a, April 7, 1910.) An alfalfa found wild on the brinks of ravines, in open plains, and along roads. Grows on rather heavy clayey soil. Roots sent under No. 756." (*Meyer.*)

27983. *VICIA FABA* L.

Broad bean.

From Yelisavetpol, Caucasus, Russia. "(No. 1318a, April 7, 1910.) A small variety of broad bean, grown as a garden vegetable by the Persian population." (*Meyer.*)

27984. *PHASEOLUS VULGARIS* L.

Bean.

From Yelisavetpol, Caucasus, Russia. "(No. 1319a, April 7, 1910.) A local variety of running garden bean, called '*Kolo-lobia*.' Considered locally one of the finest beans grown for culinary purposes. Can be eaten green as well as dried. To be tested under irrigation in the hot-summered, arid, and semi-arid sections of the United States." (*Meyer.*)

27985. *PHASEOLUS VULGARIS* L.

Bean.

From Geok-Tepe, Caucasus, Russia. "(No. 1320a, April 12, 1910.) An improved variety of the preceding number, called '*Kolo-lobia*.' Came originally from the Nuga district, Caucasus. Considered even by the Russians a very fine bean for the table. Obtained from Mr. J. K. Dieterichs. To be tested in regions like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27986. *CITRULLUS VULGARIS* Schrad.

Watermelon.

From Yelisavetpol, Caucasus, Russia. "(No. 1321a, April 7, 1910.) A red-fleshed variety, said to grow large and to be of very fine quality. To be tested in regions like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27987. *CITRULLUS VULGARIS* Schrad.

Watermelon.

From Yelisavetpol, Caucasus, Russia. "(No. 1322a, April 7, 1910.) Mixed varieties of watermelons. The small seeds are said to produce fruits weighing up to 30 pounds, and when being eaten the seeds in these are scarcely noticeable. The Yelisavetpol watermelons are noted for their large size and good quality. To be tested in regions like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27988. *CUCUMIS MELO* L.

Muskmelon.

From Geok-Tepe, Caucasus, Russia. "(No. 1323a, April 12, 1910.) A variety of muskmelon, called '*Dootma*.' Comes from the Erivan district, seeds sent from this locality under No. 1306a (S. P. I. No. 27805). Obtained from Mr. Dieterichs. To be tested like No. 1319a (S. P. I. No. 27984). These melons are buried underneath the soil while growing, as otherwise they do not acquire the right flavor and aroma." (*Meyer.*)

27989. *CUCUMIS MELO* L.

Muskmelon.

From Yelisavetpol, Caucasus, Russia. "(No. 1324a, April 7, 1910.) A local variety of muskmelon, said to be large and of fine quality. To be tested like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27990. *CUCUMIS MELO* L.

Muskmelon.

From Yelisavetpol, Caucasus, Russia. "(No. 1325a, April 7, 1910.) A choice local variety of muskmelon. Said to be of very fine texture and flavor. To be tested like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27991. *CUCUMIS MELO* L.

Muskmelon.

From Geok-Tepe, Caucasus, Russia. "(No. 1326a, April 12, 1910.) A strictly local variety of muskmelon, called '*Germek*.' Of extra fine quality,

27980 to 27995—Continued.

large size, almost globular in shape, color pale yellow with green stripes; very early, no shipper. Obtained from Mr. J. K. Dieterichs, who recommends this melon for trial in hotbeds." (*Meyer.*)

27992. CUCUMIS SATIVUS L.**Cucumber.**

From Geok-Tepe, Caucasus, Russia. "(No. 1327a, April 12, 1910.) A very fine local variety of cucumber, green, medium large, and very tender. Obtained from Mr. J. K. Dieterichs. To be tested like No. 1319a (S. P. I. No. 27984)." (*Meyer.*)

27993. PISTACIA VERA L.**Pistache.**

From Yelisavetpol, Caucasus, Russia. "(No. 1328a, April 7, 1910.) Pistachio nuts bought on the market in Yelisavetpol, said to come from Persia. Not of very fine flavor." (*Meyer.*)

27994. PANICUM MILIACEUM L.**Proso millet.**

From Erivan, Caucasus, Russia. "(No. 1329a, March 28, 1910.) A local variety of proso having large, brownish-red seeds. Said to be drought resistant." (*Meyer.*)

27995. TRITICUM AESTIVUM L.**Wheat.**

From Erivan, Caucasus, Russia. "(No. 1330a, March 28, 1910.) A local variety of soft, white, winter wheat. To be tested under irrigation in mild-wintered climates." (*Meyer.*)

27996 to 28015.

From Peru, South America. Presented by Prof. William Curtis Farabee, Division of Anthropology, Harvard University, Cambridge, Mass. Received May 2, 1910.

* Seeds of the following; notes taken from the packets:

27996. AMARANTUS sp.

From Amazon River. A plant with red leaves, eaten by cattle.

27997. CAJAN INDICUM Spreng.

Grows and produces all year.

27998. CANAVALI ENSIFORME (L.) DC.

From Madre de Dios River, altitude 900 feet.

27999. CUCURBITA FICIFOLIA Bouche.

From near Cuzco, altitude 10,000 feet.

Distribution.—Cultivated generally in the Tropics; said by some authors to be native in eastern Asia, but probably native in Peru, although nothing definite can be stated as to its native region.

28000. CUCURBITA PEPO L.

From Urubamba River. A pumpkin or squash, round, small, very good to bake.

28001. CUCURBITA sp.

From Cuzco. Very sweet.

28002. GOSSYPIUM PERUVIANUM Cav.

From upper Ucayali River.

Distribution.—Peru, Chile, and Ecuador; cultivated generally in cotton-producing countries.

27996 to 28015—Continued.**28003.** *GOSSYPIMUM* sp.**Kidney cotton.**

From Madre de Dios River.

28004. *HORDEUM VULGARE* L.**Barley.**

From Cuzco Valley.

28005. *LAGENARIA VULGARIS* Ser.

From Urubamba River.

28006 to 28008. *LYCOPERSICON* sp.**28006.** From Urubamba Valley.**28007.** From Urubamba Valley.**28008.** From St. Ana on Urubamba River.

Grow the size of a cherry.

28009. *MEDICAGO HISPIDA CONFINIS* (Koch) Burnat.**28010.** *PASSIFLORA* sp.

From Mishajua (?) River. Small pomegranate-like fruits that grow on a vine. Very good.

28011. *RUBUS* sp.**Wild raspberry.**

Growing at an elevation of 11,000 feet, 13° S. lat. Red, much larger than the common sort, good flavor, but sour.

28012. *SICANA ODORIFERA* (Vell.) Naud.**Cassabanana.**

From Urubamba River. Seed from a red gourd or pumpkin, grows on a vine which makes good shade. The fruits are good to eat and have a very pleasant odor when taken off the vine, left in the sun a short time, and then brought into the house for a few days.

See No. 27969 for previous introduction.

28013. *TRITICUM* sp.**Wheat.**

From Cuzco Valley.

28014. *VIGNA UNGUICULATA* (L.) Walp.**Cowpea.**

From Urubamba River. A small white bean which grows on the sandy banks and needs hot sun. Contains a great deal of oil.

28015. *ZEA MAYS* L.**Corn.**

From Cuzco Valley. Large, white seeded.

28016. *PROTEA MELLIFERA* Thunb.

From Cape Town, South Africa. Presented by the Conservator of Forests, at the request of Prof. J. Burt Davy, agrostologist and botanist, Transvaal Department of Agriculture. Received May 28, 1910.

A South-African bush, useful both as an ornamental and as a bee plant.

See No. 26207 for previous introduction.

28017. *CHENOPodium QUINOA* Willd.**Quinoa.**

From Bolivia, South America. Presented by Señor Don Ygnacio Calderón, E. E. and M. P., Bolivian Legation, Washington, D. C. Received May 24, 1910.

"This grain is very nutritious, the plant grows well in high altitudes, and requires little moisture." (*W. A. Reid, of the Legation.*)*Distribution.*—Cultivated in Colombia, Peru, and Chile; probably native in the same region.

See Nos. 18536 and 18537 for further description.

28022 and 28023.

From Tiflis, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 12, 1910.

Seeds of the following:

28022. PRUNUS sp.**Bush cherry.**

"(No. 1331a, Apr. 25, 1910.) A low-growing bush cherry found on very dry and stony places here and there in the Caucasus. Produces a multitude of small, rosy flowers in early April. The fruits are small and sour and can be used for compotes and jellies. Recommended as a stock for various stone fruits in arid and semiarid regions and for hybridizing purposes to create large-fruited, bushy forms of cherries. Obtained from the Tiflis Botanical Garden." (Meyer.)

28023. ANCHUSA MYOSOTIDIFLORA Lehm.

"(No. 1332a, Apr. 25, 1910.) A beautiful, perennial, spring-flowering plant, looks strikingly like a large forget-me-not. Prefers shady places. Recommended as a garden ornamental on shady situations in semiarid, mild-wintered regions. Obtained from the Tiflis Botanical Gardens." (Meyer.)

Distribution.—Shady banks and cliffs in the Caucasus region, and in the Altai Mountains of southern Siberia.

28024 to 28029.

From Tsungming, China. Obtained by Rev. James Ware of the Foreign Christian Missionary Society, Shanghai, China, and forwarded through Mr. Amos P. Wilder, American consul general. Received May 20, 1910.

"Tsungming is an alluvial island in the estuary of the Yangtze River. It lies between 31° and 32° north latitude. Prevailing winds from southeast. Total length from east to west 60 miles, average breadth 12 miles. The soil is rich except in the northwest corner, where it is overcharged with alkali. Population, including small islands around, and a few towns on the north mainland, 1,200,000." (Ware.)

Seeds of the following:

28024 to 28027. ANDROPOGON SORGHUM (L.) Brot.

28024. "*Premier.* This sorghum seed is from the middle of the island. It develops 13 joints in the stem, hence it bears the name '13-jointed' sorghum. It is the fullest and most productive of island sorghos." (Ware.)

"*Chinese sorgo.* A sorgo with obovate spikelets; black glumes with compressed tips; very small seeds and short awns. Probably the same as the Chinese sorgo originally introduced from the Island of Tsungming to France in 1851, and to the United States in 1853. Apparently identical with S. P. I. No. 22913." (Carleton R. Ball.)

28025. "The '*Tender*' sorghum is greatly cultivated, as it seems to be the easiest raised. It grows to a height of about 5 feet." (Ware.)

"Sorgo very similar to the preceding number, but with glumes varying from the normal greenish yellow to a light brown." (Carleton R. Ball.)

28026. "The '*Hard*' sorghum is planted about three weeks before the tender, and is cut about two weeks later. It is largely grown and reaches a height of about 4 feet." (Ware.)

"Appears to be a mixture of the two preceding numbers, some glumes being black and some being brown." (Carleton R. Ball.)

28024 to 28029—Continued.

28027. "Kowliang. Said to be the finest variety on the island."
(Ware.)

"Brown Kowliang. Apparently the same as S. P. I. No. 22911."
(Carleton R. Ball.)

"Please note that although sorgo is cultivated on an extensive scale the Chinese have never used the stalk for sirup manufacture. It is sold on the markets in bundles and chewed for the juice, and also fed to the pigs." (Ware.)

28028. *PANICUM MILIACEUM* L.

Proso millet.

"Mixed millet. This is mixed ready for sowing. Unless mixed, each variety would be too hard for domestic use, but in growing a mixed crop, one kind is fructified by the other and a grain is produced which is much valued as an article of diet. In many places it is ground and takes the place of flour."
(Ware.)

28029. *CHAETOCHELOA ITALICA* (L.) Scribn.

"Yellow. Also highly valued and used as the preceding (S. P. I. No. 28028)." (Ware.)

28030. ROSA GIGANTEA Collett.

From Santa Barbara, Cal. Purchased from Dr. F. Franceschi. Received at the Plant Introduction Garden, Chico, Cal., May 12, 1910.

For previous introduction of this species, see No. 27301.

28031 to 28033. DOLICHOS spp.

From Poona, Bombay, India. Procured from Mr. T. F. Main, deputy director of agriculture. Received May 23, 1910.

Seeds of the following:

28031. *DOLICHOS BIFLORUS* L.

"Kulthi."

28032 and 28033. *DOLICHOS LABLAB* L.

Bonavist bean.

28032. "Kadra Wal."

28033. "Local Wal."

28034. PINUS GERARDIANA Wall.

From Fort Sandeman, Baluchistan. Purchased from Col. G. C. Trench, political agent in Zhob. Received May 23, 1910.

See Nos. 21819 and 25316 for description.

(Seeds.)

28035. PHASEOLUS ACONITIFOLIUS Jacq.

From Poona, Bombay, India. Purchased from Mr. T. F. Main, deputy director of agriculture. Received May 23, 1910.

"Math."

(Seeds.)

28036 and 28037.

From Russia. Purchased from Messrs. Vollmer & Co., Riga, Russia. Received May 31, 1910.

Seeds of the following:

28036. *TRIFOLIUM PRATENSE* L.

Red clover.

Orel.

28036 and 28037—Continued.**28037. MEDICAGO SATIVA L.****Alfalfa.**

Samara. "This lucern seed has been grown in one of the coldest Governments in Russia, and has been recognized to be the hardiest strain ever offered. No other lucern seed will compare with it, as it comes from the cold Samara Government, near the Ural." (*Vollmer.*)

28038. ANDROPOGON SORGHUM (L.) Brot.**Sorgo.**

From Chekiang Province, China. Secured by Rev. James Ware, of the Foreign Christian Missionary Society, Shanghai, China, and forwarded through Mr. Amos P. Wilder, American consul general. Received May 20, 1910.

"This sorgo is said to grow very high. It is sown from the middle to the end of May." (*Ware.*)

"This is a sorgo very similar to No. 28024 from Tsungming Island. The spikelets are heavier and the seeds much larger, which may be due, however, to difference in cultivation. All the specimens from Tsungming Island are poorly developed, the percentage of fertile seed being small." (*Carleton R. Ball.*)

28039 to 28047.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 23, 1910.

Plants of the following:

28039. MEDICAGO sp.

From near Mshet, Caucasus, Russia. "(No. 772, April 29, 1910.) A perennial *Medicago* of rather vigorous growth, found on dry limestone banks at elevations of 3,000 feet above sea level. This and the following numbers of *Medicagos* and *Trifoliums* should be valuable as fodder plants in the cooler sections of the United States." (*Meyer.*)

28040. MEDICAGO sp.

From near Dushet, Caucasus, Russia. "(No. 773, April 29, 1910.) A perennial, large-leaved *Medicago*, found on dry places between rocks at elevations from 3,000 to 4,000 feet." (*Meyer.*)

28041. MEDICAGO FALCATA L. (?)

From between Dushet and Passanaura, Caucasus, Russia. "(No. 775, April 30, 1910.) A perennial, small-leaved *Medicago*, found in stiff clay banks at elevations over 4,000 feet." (*Meyer.*)

28042. MEDICAGO sp.

From between Dushet and Passanaura, Caucasus, Russia. "(No. 776, April 30, 1910.) A perennial, large-leaved *Medicago*, growing between rocks and stones at elevations of about 4,000 feet." (*Meyer.*)

28043. MEDICAGO sp.

From between Dushet and Passanaura, Caucasus, Russia. "(No. 777, April 30, 1910.) A small-leaved, perennial *Medicago* of very compact growth, found in stony debris at the foot of mountains and cliffs at elevations between 4,000 and 5,000 feet. Apparently seeks moisture-retaining locations." (*Meyer.*)

28044.

From between Dushet and Passanaura, Caucasus, Russia. "(No. 778, April 30, 1910.) *Trifolium* and other Leguminosæ found on stony places at elevations over 4,000 feet." (*Meyer.*)

28039 to 28047—Continued.

28045. *TRIFOLIUM* sp.

From near Guda-ur, Caucasus, Russia. "(No. 779, May 1, 1910.) A perennial clover found on dry mountain slopes at elevations of about 7,000 feet. Very drought resistant and apparently able to stand severe cold." (*Meyer.*)

28046. *MEDICAGO SATIVA GLUTINOSA* (Bieb.) Urban.

From near Vladikavkas, Caucasus, Russia. "(No. 781, May 3, 1910.) A large-leaved, perennial *Medicago*, found in dry, pebbly, limestone cliffs at about 3,000 feet elevation. Apparently very drought and cold resistant." (*Meyer.*)

28047. *ASPARAGUS* sp.

From near Dushet, Caucasus, Russia. "(No. 782, April 30, 1910.) An asparagus of ornamental habits, seen only once on a dry mountain side at an elevation of about 3,000 feet. Suitable for cultivation as a garden perennial, especially in regions of a light annual rainfall." (*Meyer.*)

28048 to 28058.

From Manchuria. Procured by Mr. Edward C. Parker, agriculturist, Bureau of Agriculture, Industry and Commerce, Mukden, Manchuria. Received June 2, 1910.

Seeds of the following; descriptive notes by Mr. Parker:

28048. *CHAETOCLOA ITALICA* (L.) Scribn.

"*Small millet*. Chinese name, *Hsiaome*. This species of millet is grown everywhere in Manchuria, from Dairen to the Amur River, and from the Pacific Ocean on the east to Mongolia on the west. This sample comes from Mukden, Manchuria, 42° north latitude. It is one of the staple and universally used human foods in Manchuria. When properly hulled and cooked it is a delicious breakfast food."

28049 to 28051. *GLYCINE HISPIDA* (Moench) Maxim.

Soy bean.

28049. Large yellow. "*White Eyebrow* soy bean. Chinese name, *Paimai*. A well-known and famous variety of the soy bean grown over large areas on the alluvial bottom lands of the Liao Ho River in Manchuria. This seed sample came from valley lands near Kwangning, 42° north latitude, where the variety has been commonly grown for several centuries. Valuable in America as foundation stock for selecting and breeding improved varieties of oil-producing seeds."

28050. Small yellow. "Small, round soy bean. Chinese name, *Chinyuan*. This variety is grown in Manchuria as far north as 47° north latitude. This seed sample came from a district northeast of Harbin, Manchuria, 46° north latitude. The beans of this variety, grown in northern latitude, are highly prized because of their heavy weight and large per cent of oil. This variety should be especially valuable to plant breeders in the upper Mississippi Valley."

28051. Black. "Black curd bean. Chinese name, *Heitou*. Commonly grown in central Manchuria. This seed sample comes from Mukden, Manchuria, 42° north latitude. These beans are principally used for the production of bean curd. The beans are soaked, ground into coarse meal, and a filtrate formed that is coagulated with salt. The coagulated mass is pressed into a curd with stones. A meal made from these beans is mixed with corn meal for baking cakes."

28048 to 28058—Continued.

28052. PHASEOLUS ANGULARIS (Willd.) W. F. Wight. Adzuki bean.

"Red bean. Chinese name, *Hungchiangtou*. Commonly grown in central Manchuria for human food. This seed sample comes from Mukden, Manchuria, 42° north latitude. The beans are sometimes cooked green, but more commonly dried and boiled with millet or kowliang."

28053. PHASEOLUS RADIATUS L.

"Small green bean. Chinese name *Lutou*. Commonly grown in central Manchuria for human food. This sample comes from Mukden, Manchuria, 42° north latitude. These beans are usually cooked with millet or kowliang for food. They are also ground into meal and the meal mixed with kowliang meal in the production of vermicelli."

28054. CANNABIS SATIVA L.

Hemp.

"Chinese name *Houma*. Grown in large quantities in Manchuria for the production of fiber. This sample comes from Mukden, Manchuria, 42° north latitude."

28055. FAGOPYRUM VULGARE Hill.

Buckwheat.

"Chinese name *Chiaomai*. Common throughout all Manchuria, where it is sown in the latter part of June, or the first part of July, following barley or wheat. This sample comes from Mukden, Manchuria, 42° north latitude. Manchurian buckwheat, as a rule, appears to have larger and heavier kernels than varieties common in America."

28056. ORYZA SATIVA L.

Rice.

"Upland rice. Chinese name *Tschingtze*. Common in north central Manchuria. This sample comes from Mukden, Manchuria, 42° north latitude."

28057 and 28058. ANDROPOGON SORGHUM (L.) Brot.

Kowliang.

28057. "High stalk, spreading panicle. Chinese name *Sungma Kao-liang*. This plant is the chief and characteristic crop of Manchuria. Its seeds are the every day food of most of the common people, as well as the chief food of the farm animals. The leaves are stripped off the plant for live-stock food, and the stalks are burned to boil the water and heat the mud houses for all Manchuria. This sample of seed comes from Mukden, Manchuria, 42° north latitude, and is of a tall-growing variety with open or spreading panicle. This tall kowliang thrives best in latitude 38° to 42° north, maturing usually in October and requiring a late autumn to ripen properly. It will withstand drought, hot, drying winds, and an excess of moisture better than maize. The stalks are fibrous and rigid and do not lodge under stress as easily as maize."

"Seeds large, yellowish brown; glumes, light brown; contains a slight mixture of a black-glume variety." (*Carleton R. Ball.*)

28058. "Short stalk, compact panicle. Chinese name *Chinma Kao-liang*. This species matures somewhat earlier than the tall variety (S. P. I. No. 28057) and is grown commonly in Manchuria north of 42° north latitude. This sample comes from Mukden, Manchuria. Usage same as No. 28057."

"Seeds large, pale brown to reddish brown; glumes black and shining." (*Carleton R. Ball.*)

28059 and 28060.

From Saigon, Cochin China. Presented by Mr. P. Morange, Chef du Service de l'Agriculture. Received June 1, 1910.

Seed of the following:

28059. *DIOSPYROS DECANDRA* Lour.

Distribution.—The northern provinces of Cochin China; fruits offered for sale in the markets of the villages.

28060. *GARCINIA COCHINCHINENSIS* (Lour.) Chois.

Distribution.—Cultivated and probably also native in Cochin China.

See No. 12021 for description.

28061. BRITOA ACIDA (Mart.) Berg.

From Para, Brazil. Presented by Mr. W. Fischer, Campo de Cultura Experimental Paraense. Received June 4, 1910.

"This plant is related to the guava; the fruit is round, with a diameter of 2 to 2½ inches; the taste is almost like that of the guava, but very acid. The seeds are few. The color is like the guava externally; internally it is pale yellow. The skin is thin." (*Fischer.*)

Distribution.—In the woods along the Amazon River in the vicinity of Nogueira, Brazil.

28062 and 28063. MEDICAGO spp.

From Palermo, Sicily, Italy. Presented by the Director, Palermo Botanical Garden. Received May 6, 1910.

Seed of the following:

28062. *MEDICAGO HISPIDA CONFINIS* (Koch) Burnat.

28063. *MEDICAGO HISPIDA NIGRA* (L.) Burnat.

28064 to 28069. MEDICAGO spp.

From Madrid, Spain. Presented by the Director, Madrid Botanical Garden. Received May 6, 1910.

Seed of the following:

28064. *MEDICAGO BLANCHEANA* Boiss.

Distribution.—Syria, extending from Marash southward to the region around Saida.

28065. *MEDICAGO HISPIDA DENTICULATA* (Willd.) Urban.

28066. *MEDICAGO HISPIDA* Gaertn.

28067 and 28068. *MEDICAGO HISPIDA NIGRA* (L.) Burnat.

28069. *MEDICAGO RIGIDULA* (L.) Desr.

28070 and 28071. MEDICAGO FALCATA L.

From Russia. Received through Prof. N. E. Hansen, Agricultural Experiment Station, Brookings, S. Dak., May 7, 1910.

Seeds of the following:

28070. "(No. 260.) Seeds gathered from plants growing wild in the dry steppes of the Semipalatinsk region, Akmolinsk Province, southwestern Siberia, in 1908, by courtesy of Mr. L. A. Sladkoff, assistant director, Department of Crown Domains, Omsk, Siberia." (*Hansen.*)

28070 and 28071—Continued.

28071. "(No. 261.) Seeds gathered from plants growing wild in the dry steppe region at Orenburg in 1908, by courtesy of Mr. W. S. Bogdan, agronomist of the Turgai-Ural region, Orenburg, Orenburg Province, on the extreme eastern border of European Russia. The yield of hay is 30 pood per desiatine, which equals 2 tons per acre, and the yield of seed 26 pood per desiatine, or 348 pounds per acre." (*Hansen.*)

28072. ALEURITES FORDII Hemsl.**China wood-oil tree.**

From Hankow, China. Procured through Mr. Hubert G. Baugh, vice consul general in charge. Received at the Plant Introduction Garden, Chico, Cal., April 27, 1910.

See No. 25081 for description.

28073 to 28092.

From Port-of-Spain, Trinidad. Presented by Mr. F. Evans, Botanical Department, Department of Agriculture. Received June, 1910.

Plants of the following; notes by Mr. Evans:

28073. ANEMOPAEGMA GRANDIFLORA Sprague.

A climbing plant, probably a native of Trinidad.

28074. ANONA SQUAMOSA L.

Sugar-apple.

28075. BERTHOLLETIA NOBILIS Miers.

Brazil nut.

Distribution.—The northern part of South America; in the valley of the Amazon and in Guiana.

28076. BLIGHIA SAPIDA Konig.

Akee.

See No. 24592 for description.

28077. CARYOPHYLLUS AROMATICUS L.

Clove.

See No. 27680 for description.

28078. CINNAMOMUM CAMPHORA (L.) Nees.

Camphor.

Distribution.—The Provinces of Kiangsu, Chekiang, Fukien, Hupeh, and Kwangtung, in the Chinese Empire, in the island of Formosa, and in Japan. Commonly cultivated in India and many other countries.

28079. CINNAMOMUM ZEYLANICUM Garc.

Cinnamon.

Distribution.—Probably a native of Ceylon; cultivated in most tropical countries.

28080. COFFEA LAURENTII Wildem.

Coffee.

Distribution.—Found in cultivation at Lusambo on Sankuru River in the Kongo Free State, Africa.

28081. DIOSPYROS DISCOLOR Willd.

Mabola.

See No. 26112 for description.

28082. DURIO ZIBETHINUS Murr.

Durian.

"A large tree of the Malay Islands, producing a large fruit 10 by 7 inches, called durian, or civet-cat fruit, of which the cream-colored fleshy aril or pulp enveloping the seeds, like that of the jack-fruit, is the part eaten. The roasted seeds and the boiled unripe fruit are also eaten as vegetables." (*Watt, Dictionary of the Economic Products of India.*)

"The odor of this fruit is intensely disagreeable to many people." (*Fairchild.*)

28073 to 28092—Continued.

Distribution.—The Malayan Islands; cultivated in the Malay Peninsula.

See No. 27169 for previous introduction.

28083. *GARCINIA MANGOSTANA* L. **Mangosteen.**

See No. 25887 for description.

28084. *MANGIFERA INDICA* L. **Mango.**

Julie. Grafted plant. See Nos. 21515, 25861, and 26125 for previous introductions of this variety.

28085. *MANGIFERA INDICA* L. **Mango.**

D'or. Grafted plant.

28086. *PERSEA AMERICANA* Miller. **Avocado.**

28087. *PSIDIUM GUAJAVA* L. **Guava.**

Large, red fruited.

28088. *PSIDIUM LAURIFOLIUM* Berg. **Nicaraguan guava.**

See No. 26413 for previous introduction.

28089. *SAPOTA ZAPOTILLA* (Jacq.) Coville. **Sapodilla.**

28090. *SPONDIAS DULCIS* Forst. **We fruit or golden-apple.**

See No. 26470 for description.

28091 and 28092. *THEOBROMA CACAO* L. **Cacao.**

28091. *Alligator.* Seedling plants.

28092. *Forestera.* Grafted plants.

Distribution.—The forests of the Amazon and Orinoco valleys up to an elevation of 400 feet; cultivated and naturalized throughout tropical America and in the Philippines.

28095 to 28116.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, May 25, 1910.

Seeds of the following; notes by Mr. Husbands:

28095 and 28096. *CRINODENDRON PATAGUA* Molina.

See No. 25489 for previous introduction.

28097 and 28098. *JUBAEA CHILENSIS* (Mol.) Baill.

28097. "Indian name '*Lilla*.' " The shorter, thicker class of Chile palm from which a fine table sirup is made.

28098. "Indian name '*Caucan*,' same as the preceding (S. P. I. No. 28097), but grows very tall and slim."

See No. 25612 for previous introduction.

28099 to 28109. *JUGLANS REGIA* L. **Walnut.**

28099. "A large variety. A fair per cent of this tree produces nuts with shells having 3 parts instead of 2."

28100. "The common variety, introduced by the Spaniards. The specimens selected were those having shells in 3 parts."

28101 to 28109. "Different strains grown in Chile for very many years. This year being a drought year the nuts are smaller than usual."

28095 to 28116—Continued.

28110. *LAVATERA ASSURGENTIFLORA* Kellogg.

"This deciduous shrub, from the island of Anacapa off the coast of Santa Barbara, and now, to some extent, cultivated, is one of rare beauty and grace. As an ornamental shrub, or tree, for it attains to the height of 15 feet, it will be highly esteemed when more generally known. The flowers are purple, about two and a half inches broad, and in this climate continue long in bloom." (*Kellogg, in Proceedings California Academy, vol. 1, p. 14. 1854.*)

28111 and 28112. *MAYTENUS BOARIA* Molina.

28111. "Weeping Maiten. Has a red bark and one seed in a pod; the seeds contain a quantity of oil."

28112. "*Maiten derecho*. Leaves and branches grow straight upright. Has white bark and two seeds in each pod, the seeds contain a quantity of oil."

See No. 26187 for previous introduction.

28113. *NOTHOFAGUS* sp.

From dry central Chile.

28114. *PISUM ARVENSE* L.

Pea.

"Stringless peas, whose extra-large, sweet, thick pods are comestible like green beans."

28115. *RICINUS COMMUNIS* L.

Castor-oil bean.

"Wild castor beans from the dry hills of Coquimbo."

28116. *VILLARESIA MUCRONATA* Ruiz. & Pav.

Nearly all of the publications on Chilean botany that include this species give *Citrus chilensis* Molina, 1782, as a synonym. If this citation is correct the specific name *chilensis* is earlier than *mucronata*, but with the material at present available it is impossible to establish their identity.

"*Gillipatagua*."

Distribution.—A tree growing in the central provinces of Chile and extending as far southward as the region around Concepcion.

28117 to 28121. *CERATONIA SILIQUA* L.

Carob.

From Lisbon, Portugal. Presented by Companhia Das Lezirias do Tejo e Sado. Received June 2, 1910.

Cuttings of the following:

28117. *Burro*.

28120. *Galhosa*.

28118. *Canella*.

28121. *Mulata*.

28119. *Costella de Vacca*.

28122 to 28124.

From Buitenzorg, Java. Presented by the Director of Agriculture. Received June 2, 1910.

Plants of the following:

28122. *ATALANTIA BILOCULARIS* (Roxb.) Wall.

See No. 24433 for description.

28123. *FERONIA LUCIDA* Scheffer.

Distribution.—The province of Rembang on the north shore of the island of Java.

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28122 to 28124—Continued.**28124.** GLYCOSMIS PENTAPHYLLA (Retz.) Correa.Variety *dilatata*. See No. 24609 for previous introduction.**28125.** SICANA ODORIFERA (Vell.) Naud.**Cassabanana.**

From Tampico, Mexico. Presented by Dr. Edward Palmer, through Mr. H. Pittier. Received June 6, 1910.

"A native of Brazil. Edible when still tender, but often cultivated on account of its odorous gourdlike fruits." (*Pittier*.)

See Nos. 27969 and 28012 for previous introductions.

28126. CAPPARIS SPINOSA L.**Caper.**

From near Petrovsk, Caucasus, Russia. Received through Mr. Frank N. Meyer, Agricultural Explorer, June 4 and 20, 1910.

"(No. 783, May 18, 1910.) The well-known caper plant, an herbaceous perennial, making long branches which crawl over the earth. Grows on very dry and stony places in the northeastern sections of the Caucasus, where occasionally winter temperatures of -20° C. (-4° F.) are experienced. Tens of thousands of rubles' worth of pickled capers are annually exported from the Caucasus, all gathered from wild plants. This caper plant may prove of value as a profitable crop for the more arid southwestern sections of the United States. As the plants require much space they should be planted at least 10 feet apart in all directions." (*Meyer*.)

Distribution.—Southern Europe and western Asia eastward to northern India, in northern Africa, and in Australia and the Sandwich Islands.

28128. MACHILUS NANMU (Oliv.) Hemsl.

From Yachow, West China. Presented by Mr. H. J. Openshaw. Received May 7, 1910.

"A splendid hard-wood tree which, I think, ought to grow in the lower altitudes. It is insect proof and is almost as hard as teak." (*Openshaw*.)

"*Nanmu*, sometimes erroneously called cedar, whereas it might be styled Chinese laurel, is the most famous of Chinese woods. Several species of *Machilus* and *Lindera* are called by the name *Nanmu*; and it is not yet quite certain which species yields the famous timber used in building the imperial palaces. This timber is said to come from Szechwan and Yunnan; and it is probable that it is produced by *Machilus nanmu* Hemsl., of which Davenport, Baber, etc., sent specimens from those provinces as yielding the famous wood. *Nanmu* also occurs in Fukien, and is there an excellent wood, capable of being used for making elegant writing desks and the like." (*Henry, Economic Botany of China, 1893: p. 43.*)

Distribution.—The provinces of Szechwan and Yunnan, in the Chinese Empire.

28129 and 28130. ZIZIPHUS spp.

From Maskat, Oman, Arabia. Procured by Mr. John A. Ray, American consul. Received June 1, 1910.

Seed of the following; notes by Mr. Ray:

28129. ZIZIPHUS MAURITIANA Lam.

"*Jarrari*. This variety has very hard seeds and the name is supposed to refer to the act of pulling the stones out of one's mouth and throwing them away."

See Nos. 23439 to 23446 and 25777 for previous introductions.

28129 and 28130—Continued.**28130. ZIZIPHUS OXYPHYLLA** Edgew.

"*Qadhmani*. This name refers to the fact that they can be chewed up, stones and all. Some call them '*Makki*,' as they are thought to have been introduced here from the city of Mecca."

Distribution.—Found occasionally on the eastern flanks of the Sulaiman Range and in the outer Himalayas as far as the Ganges, in northwestern India.

"The jujube tree grows in this dry country without any attention or irrigation. The fruit is relished by the natives, but I do not think Americans will care for it. It has a taste vaguely resembling the red haw of Texas, if the memories of my childhood do not play me false. The English call the fruit I have sent you '*nubbuck apples*.' The Arabic name of the fruit is '*Nabaq*,' the tree is called '*Sidr*.'"

NOTE.—The Tournefortian genus *Ziziphus* was not recognized by Linnæus in his *Species Plantarum* but was united with *Rhamnus*, and the five species known to Linnæus were included as *Rhamnus lotus*, *R. jujuba*, *R. oenopolia*, *R. zizyphus*, and *R. spina-christi*. *Ziziphus* was, however, recognized as a distinct genus by a number of authors soon after the publication of the *Species Plantarum* in 1753. The first of these appears to have been Duhamel (*Traité des Arbres*, 1756, vol. 2, p. 377), with one species, followed by Miller (*Gard. Dict.*, ed. 7, 1759), with four species, Adanson (*Familles des Plantes*, 1763, vol. 2, pp. 304, 620), with six species, and by other authors. The first of these authors to use the Linnæan binomial nomenclature was Philip Miller in the 1768 edition of the *Gardener's Dictionary*, and the four species of the 1759 edition are there included as *Ziziphus jujuba*, *Z. sylvestris*, *Z. oenoplia* [*oenopolia*], and *Z. africana*. Miller, however, did not apply the name *Ziziphus jujuba* to *Rhamnus jujuba* of Linnæus, for which species it has been almost universally used by subsequent authors, but to "The common Jujube," *Rhamnus zizyphus* of Linnæus (*Z. sativa* Gaertn. 1788, *Z. vulgaris* Lam. 1789). To conform to the present practice in specific nomenclature *Rhamnus jujuba* L. must therefore be known as *Ziziphus mauritiana* Lam., this being the next earliest available name applied to the species, while *Rhamnus zizyphus* L. becomes *Ziziphus jujuba* Miller. Miller's *Ziziphus sylvestris* is *Z. lotus* (L.) Lam. and his *Z. africana* is *Z. spina-christi* (L.) Willd.

28131. ANONA RETICULATA L.**Custard-apple.**

From Manila, Philippine Islands. Presented by Mr. A. J. Perkins. Received April 16, 1910.

28132 to 28135.

Material being grown at the Subtropical Garden, Miami, Fla., to be used in plant-breeding work. Numbered June 13, 1910.

Plants of the following; notes by Mr. P. J. Wester:

28132. ANONA RETICULATA L.**Custard-apple.**

"Bud wood secured in Nassau, New Providence, Bahamas, April, 1906, by Mr. P. J. Wester from a prolific seedling tree; fruit medium to large."

28133. ANONA SQUAMOSA L.**Sugar-apple.**

"Plants received at the Subtropical Garden, Miami, Fla., April 23, 1909, from Dr. F. Franceschi, Santa Barbara, Cal., grown by him from seed obtained in Paraguay, South America."

28134. PSIDIUM GUAJAYA L.**Guava.**

"Bud wood obtained by Mr. P. J. Wester from a seedling tree owned by Mr. J. O. Pardoe, Biscayne, Fla. Fruit medium large, yellowish; flesh, pale red;

28132 to 28135—Continued.

number of seeds, average. One of the best flavored guavas that has come to my attention.

28135. *ROLLINIA EMARGINATA* Schlecht.

"Plants received from Dr. F. Franceschi, Santa Barbara, Cal., April 23, 1909, at the Subtropical Garden, Miami, Fla. Grown by Dr. Franceschi from seed obtained in Paraguay."

28136 to 28151. CERATONIA SILIQUA L.**Carob.**

From Portugal. Procured by Mr. Louis H. Aymé, American consul general, Lisbon. Received June 11, 1910.

Cuttings of the following:

28136 to 28142. From the Municipality of Lagôa (Silves).

28136. From Manoel F. Gomes, Cotovio.

28137. From Manoel F. Gomes, Serro dos Negros.

28138. From Manoel F. Gomes, Boavista.

28139. From Manoel F. Gomes, Gramacho.

28140. From Gregoria José Luiz, Gramacho.

28141. From Antonio Franco, Sintra, Boavista.

28142. From José da Silva Ruivo, Serro dos Negros.

28143 to 28151. From the Municipality of Va. Na. de Portimao.

28143. From D. Luiz Bordasy Marimon, Poco da Lage.

28144. From D. Luiz Bordasy Marimon, Vao da Rocha.

28145. From Visconde d'Alvôr, Serro dos Corcos.

28146. From Dr. Alfredo Magalhães Barros, Chao das Donas.

28147. From Antonio Trindade, Valle d'Arrencada.

28148. From Antonio Trindade, Chao das Donas.

28149. From Luiz Duarte, Sabolar.

28150. From Amaro Duarte, Sabolar.

28151. From Visconde da Rocha, Valle de Franca.

"My friend who procured these cuttings advises that in order that the carob trees bear every year, every tree ought to be grafted with a branch from the male carob, which is necessary to fecundate the flowers and thus avoid poor years." (*Aymé.*)

28152. MEDICAGO sp.

From Baku, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, June 13, 1910.

"(No. 784, May 26, 1910.) A perennial medicago of creeping habit; it has small racemes of blue flowers and small, scanty leaves. Grows on most remarkably dry and stony places and remains green after the other vegetation has turned brown. It is eagerly browsed by sheep and goats. As the climate around Baku is almost arid, this medicago may prove to be valuable in some of our driest sections of the Southwest." (*Meyer.*)

28153 to 28180.

From Wuchang, Hupeh, China. Presented by Director Whong, Chinese Government College of Agriculture, through Mr. Howard Richards, jr., Boone College, Wuchang. Received June 6, 1910.

Seeds of the following; Chinese names as given on the packets:

28153. CASTANOPSIS sp.

Ber shin tze tree.

28154 and 28155. CINNAMOMUM CAMPHORA (L.) Nees. & Eberm.

28154. *Pei pai chang.* White camphor wood.

28155. *Hwar chong tree.*

28156. CITRUS DECUMANA (L.) Murr.

Pomelo.

Shong yuen tree.

28157. LIQUIDAMBAR FORMOSANA Hance.

Mow fong tree.

Distribution.—In the provinces of Kiangsi, Fukien, Hupeh, and Kwangtung, in the Chinese Empire, in the island of Formosa, and in Japan.

28158 to 28175. ORYZA SATIVA L.

Rice.

28158. *Bei kwoo lo.*

28167. *Tsung tien lo.*

28159. *Bei yiu kwu.*

28168. *Tse koo lo.*

28160. *Hun mon lo.*

28169. White.

28161. *Hwong kwoo lo.*

28170. *Wan kwo.*

28162. *Sung le lo.* Japanese variety.

28171. *Woo mon lo.*

28163. *Kwan tsu dow.*

28172. *Wu mong lo.*

28164. *Mon tsung ho.*

28173. *Ye zei lo.*

28165. *Sei kwan shü.*

28174. *Yuen che lian lun.*

28166. *Tsung ten.*

28175. *Zo tsen bow sung.*

28176. QUERCUS sp.

Ung se lai.

28177. SORBUS sp.

Yo dzor tsz.

28178. THEA SINENSIS L.

Tea.

Red.

28179 and 28180. TRACHYCARPUS EXCELSUS (Thunb.) Wendl.

28179. Palm tree.

28180. *Ju tree.*

See Nos. 26907 and 27456 for previous introduction.

28181. PSIDIUM GUAJAVA L.

Guava.

Grown at the Subtropical Garden, Miami, Fla. Numbered June 17, 1910.

Bud wood obtained May, 1909, by Mr. P. J. Wester from Mr. Orange Pound, Coconut Grove, Fla., for breeding purposes.

"This is a white-fleshed guava, rather larger than the average fruit found in the market and with seeds less numerous. In flavor it is mild and sweet. Mr. Pound claims to have found nearly seedless fruits on the tree." (*Wester.*)

28182. LARIX SIBIRICA Ledeb.

From Helsingfors, Finland. Presented by Miss Alexandria Smirnov. Received June 1, 1910.

Distribution.—Province of Chihli in China, and in Mongolia and Manchuria.

See No. 2175 for previous introduction.

28183 to 28190.

From Mexico. Collected and presented by Dr. J. N. Rose, associate curator, Division of Plants, U. S. National Museum, Washington, D. C. Received May 23, 1910.

Seeds of the following:

28183 to 28185. CARDIOSPERMUM spp.

28183. From Guaymas. **28185.** From San Blas.

28184. From Mazatlan.

28186 to 28189. DIOSPYROS spp.

28186. From Altata. **28188.** From Hermosillo, Sonora.

28187. From Guadalupe. **28189.** From Mazatlan.

28190. PHASEOLUS sp.

From near Villa Union, Sonora.

28191. NICOTIANA TABACUM L.

Tobacco.

From Pirapo, Paraguay. Presented by Mr. J. Eliot Coit, Southern California Laboratory, California Agricultural Experiment Station, Whittier, Cal. Received June 21, 1910.

"The friend from whom I received this seed described it as being a high-quality filler tobacco, which under extremely poor management is said to yield a leaf somewhat inferior to the Cuban, but decidedly superior to the American grown." (Coit.)

28193. SACCHARUM OFFICINARUM L.

Sugar cane.

From Okinawa ken, Kiushu, Japan. Purchased from the Yokohama Nursery Co., Yokohama, Japan. Received June 22, 1910.

"Yomitani yama." Early variety.

"Japanese sugar cane is now quite extensively grown in Florida and the southern portions of the States near the Gulf of Mexico. It is grown largely for forage and to some extent for sirup. Its use for forage is rapidly increasing. While it has been used successfully for ensilage, it is commonly fed green or pastured. Fields of this variety last as much as 12 years. The variety now grown in the Southern States was introduced about 12 years ago. The present variety is believed to be different from that originally introduced." (C. V. Piper.)

28194 to 28197.

From Guatemala. Presented by Dr. J. N. Rose, associate curator, U. S. National Museum. Received May 22, 1910.

Seeds of the following:

28194. BOUTELOUA BROMOIDES (H. B. & K.) Lag.

From Aguas Calientes.

Distribution.—Texas and Arizona and southward through Mexico to Nicaragua and Panama.

28194 to 28197—Continued.**28195.** *ECHINOCHLOA COLONA* (L.) Link.

From Gualan.

Distribution.—Widely spread in the warm regions of both hemispheres.**28196.** *PANICUM FASCICULATUM* Swartz.

From Gualan.

Distribution.—Mexico, from the vicinity of San Luis Potosi, southward to tropical South America, and in the West Indies.**28197.** *CARICA PAPAYA* L.**Papaya.**

From Gualan.

28198. ANANAS SATIVUS Schult. f.**Pineapple.**

From Sunnybank, near Brisbane, Queensland, Australia. Presented by Mr. John Williams, The Sunnybank Nursery. Received June 17, 1910.

"John Williams Improved Smooth Leaf. This is a cross of *Ripley Queen* and *Smooth Cayenne*, giving it a much better flavor, and the habit of *Cayenne*." (Williams.)**28199 to 28262.**

From Cambridge, England. Presented by the director of the Botanic Garden, Cambridge University. Received May 7, 1910.

Seeds of the following:

28199. *AGROPYRON CRISTATUM* (L.) Beauv.*Distribution.*—In open sandy and stony places in eastern Germany and western Hungary.**28200.** *BIDENS HUMILIS* H. B. & K.*Distribution.*—Found at the base of the Volcano Cotopaxi in northern Ecuador.**28201.** *BIDENS PILOSA* L.*Distribution.*—Texas and New Mexico, southward through Mexico and Central America to Chile and southern Brazil; introduced throughout the tropics.**28202.** *CLEMATIS MONTANA* Hamilton.*Distribution.*—India, on the temperate slopes of the Himalayas from the Indus to the Brahmaputra, ascending to 12,000 feet, and in the Khasi Hills at an elevation of 4,000 feet and above.**28203.** *CORNUS ALBA* L.*Distribution.*—Widely distributed in Siberia, extending eastward to the Amur, and to northern China. Cultivated as an ornamental shrub.**28204.** *CORNUS AMOMUM* Miller.*Distribution.*—Wet places from Newfoundland westward to North Dakota and southward to Florida and Louisiana.**28205.** *CORNUS MAS* L.*Distribution.*—From central Europe eastward through Italy and Greece to the Caucasus region of southern Russia. Cultivated in the United States as an ornamental.**28206.** *COSMOS SULPHUREUS* Cav.*Distribution.*—Southern Mexico from Cordova to Oaxaca, rising to an elevation of 5,500 feet in the cordilleras of Oaxaca.

28199 to 28262—Continued.

28207. *COTONEASTER AFFINIS* Lindl.

Distribution.—Northwestern Himalayas in the Province of Nepal, northern India.

28208. *COTONEASTER AFFINIS BACILLARIS* (Wall.) Schneider.

Distribution.—The temperate slopes of the Himalayas from Waziristan eastward through Muree and Kashmir to Nepal, rising to an altitude of 10,000 feet.

28209. *COTONEASTER HORIZONTALIS* Decaisne.

Distribution.—The Province of Szechwan in western China. Cultivated as an ornamental.

28210. *COTONEASTER RACEMIFLORA* (Desf.) Koch.

Distribution.—The Caucasus region and Asia Minor eastward to western Tibet and Kashmir, where it is found at an elevation of 11,000 feet; also in northern Africa.

28211. *COTONEASTER ROTUNDIFOLIA* Wall.

Distribution.—Northern India; the slopes of the Himalayas up to 11,000 feet from Nepal eastward to Sikkim and Bhutan.

28212. *COTONEASTER SIMONSII* Baker.

Distribution.—Slopes of the Khasi Hills in the Province of Assam in the northeastern part of India.

28213. *COTONEASTER TOMENTOSA* (Ait.) Lindl.

Distribution.—Mountains of southern Europe from the Pyrenees and Alps eastward to Macedonia.

28214. *CYCLANTHERA EXPLODENS* Naudin.

Distribution.—From the province of Orizaba in Mexico southward through Central America to the mountains of Ecuador.

28215. *DABOECIA CANTABRICA* (Huds.) Koch.

Distribution.—The western coast of Europe; common on the heathy wastes of the Asturias and southwestern France, and extending northward to Connemara in Ireland.

28216. *DAHLIA GRACILIS* Ortegies.

Distribution.—Northern Mexico; at an elevation of 6,000 to 8,000 feet in the region of San Luis Potosi.

28217. *ERICA CILIARIS* L.

Distribution.—Along the western coast of Europe from Ireland and southwestern England through western France to northern Spain and Portugal.

28218. *EXACUM AFFINE* Balfour.

Distribution.—Found on the island of Socotra on the east coast of Africa. Grown in the United States as a greenhouse plant.

28219. *FESTUCA AMPLA* Hackel.

Distribution.—In the vicinity of Coimbra in Portugal and on the Sierra de Alfacer and the Sierra Nevada in the vicinity of Granada in Spain.

28220. *IMPATIENS OLIVERI* C. H. Wright.

Distribution.—On volcanic rocks and tufa in the province of Uganda, British East Africa.

28221. *IMPATIENS ROYLEI* Walp.

Distribution.—Temperate slopes of the western Himalayas from Nepal to Marri, India, at an elevation of 6,000 to 8,000 feet.

28199 to 28262—Continued.

28222. *IMPATIENS SCABRIDA* DC.

Distribution.—Shady woods of the temperate Himalayas at an altitude of 6,000 to 10,000 feet between Kunawar and Bhutan in northern India.

28223. *LIMNANTHES DOUGLASSII* R. Br.

Distribution.—Along the banks of the Umpqua River in western Oregon.

28224. *LYSIMACHIA VULGARIS* L.

Distribution.—On shady banks along streams in Europe and Russian Asia, from the Mediterranean and the Caucasus region northward to the Arctic circle. Naturalized in the United States from Maine to Ontario and southward to Ohio.

28225. *MEDICAGO HISPIDA DENTICULATA* (Willd.) Urban.28226. *MEDICAGO HISPIDA* Gaertn.28227. *MEDICAGO ORBICULARIS MARGINATA* (Willd.) Benth.28228. *MEDICAGO TRUNCATULA* Gaertn.

Distribution.—The countries bordering on the Mediterranean from Spain through France, Italy, Greece and Asia Minor to Arabia, and in northern Africa.

28229. *PRIMULA FLORIBUNDA* Wall.

Distribution.—Slopes of the western Himalayas at an altitude of 2,500 to 6,500 feet, between Kumaon and Kashmir, also in Afghanistan.

28230. *PRIMULA JAPONICA* A. Gray.

Distribution.—Shady valleys among the mountains in the provinces of Hakone and Yezo in central Japan. Cultivated in the United States as an herbaceous perennial.

28231. *PRIMULA MOLLIS* Nutt.

Distribution.—The eastern Himalayas in the vicinity of Bhutan in northern India.

28232. *PRIMULA ROSEA* Royle.

Distribution.—Slopes of the western Himalayas from Kulu to Kashmir at an altitude of 10,000 to 12,000 feet; also Afghanistan.

28233. *PRIMULA VERTICILLATA* Forsk.

Distribution.—Along the streams running from mount Kurm into the Dead Sea, western Arabia.

28234. *ROSA ALPINA* L.

Distribution.—Alpine slopes of the mountains of central Europe, especially in the Swiss Alps.

28235. *ROSA BLANDA* Ait.

Distribution.—Northeastern America; from Newfoundland to New England and westward, chiefly in the region of the Great Lakes, to Missouri and Assinaboia.

28236. *ROSA CANINA* L.

Distribution.—In thickets and hedges throughout Europe extending to the Ural Mountains and Dzungaria; also in the Canary Islands and in northern Africa.

28237. *ROSA GALLICA* L.

Distribution.—Europe and western Asia; from Belgium and Spain eastward to Asia Minor and the Caucasus region.

28199 to 28262—Continued.

28238. *×* *ROSA HIBERNICA* Smith.

Distribution.—A hybrid between *Rosa canina* and *R. spinosissima* arising in the counties of Derry and Down in Ireland.

28239. *ROSA MACROPHYLLA* Lindl.

Distribution.—In the Himalayas up to 10,000 feet between Murree and Sikkim, and in the provinces of Chihli and Yunnan in China.

28240. *ROSA MULTIFLORA* Thunb.

Distribution.—Apparently native throughout China, the Korean Archipelago and Japan; common in cultivation.

28241. *ROSA RUGOSA* Thunb.

Distribution.—The Provinces of Chihli, Shingking, and Shangtung in China, in the Korean islands, and in Japan.

28242. *ROSA TOMENTOSA* Smith.

Distribution.—In hedges and thickets throughout Europe and western Asia, chiefly in the northern part, and in the mountainous districts of southern Asia.

28243. *ROSA VILLOSA* L.

Distribution.—Mountains of Norway and Sweden southward to central Spain and eastward to the region of the Caucasus Mountains and Armenia.

28244. *ROSA VIRGINIANA* Miller.

Distribution.—Margins of swamps and rocky shores from Newfoundland to eastern Quebec and southward to New York and eastern Pennsylvania.

28245. *SAMBUCUS EBULUS* L.

Distribution.—Central and southern Europe and Asia Minor, northern Africa, and eastward through Persia to Kashmir and the Elburz Mountains.

28246. *TROPAEOLUM MAJUS* L.

28247. *TROPAEOLUM MINUS* L.

28248. *ULEX EUROPAEUS* L.

Distribution.—On heaths and sandy and stony wastes in western Europe, extending eastward to northern and central Germany; abundant in England, Ireland, and Scotland.

28249. *VIOLA ARENARIA* DC.

Distribution.—Sandy and stony places in Europe from Norway and England southward to the Mediterranean, and in northern Asia.

28250. *VIOLA CANINA* L.

Distribution.—Very common throughout Europe and northern Asia.

28251. *VIOLA CORNUTA* L.

Distribution.—Southern Europe, especially in the Pyrenees.

28252. *VIOLA CUCULLATA* Ait.

Variety *alba*.

Distribution.—In wet places throughout the northeastern United States.

28253. *VIOLA ELATIOR* Fries.

Distribution.—Damp pastures and copses in northern and central Europe, thence eastward to the Altai Mountains and southward to Asia Minor.

28254. *VIOLA ERICETORUM* *×* *RUPPII*.

28199 to 28262—Continued.**28255. VIOLA HIRTA L.**

Distribution.—On rocks and in pastures throughout Europe and to the Caucasus Mountains and Asia Minor in southwestern Asia.

28256. VIOLA MIRABILIS L.

Distribution.—Mountainous woods in Germany and Sweden and northern Russia, and southward to the Caucasus Mountains.

28257. VIOLA MUNBYANA Boiss. & Reut.

Distribution.—On the slopes of Mount Beni-Salah near the village of Blidah, on the coast of Algeria.

28258. VIOLA ODORATA L.

Distribution.—On banks, under hedges, in woods, and on the borders of pastures over most of Europe and Asia, extending north to temperate Sweden.

28259. VIOLA PERSICIFOLIA Roth.

Distribution.—Along canals and brooks and in swamps in southern and western Germany, and in Switzerland.

28260. VIOLA PRATENSIS Mert. & Koch.

Distribution.—Damp pastures, meadows, and sandy banks of streams in Bohemia and the valley of the Rhine in Germany.

28261. VIOLA ROSTRATA Muhlenburg.

Distribution.—Northeastern North America, from Quebec to Michigan and southward in the Alleghenies to Georgia.

28262. VIOLA TRICOLOR L.

Distribution.—On hilly pastures and banks in cultivated and waste places throughout Europe and Asia. Sparingly persisting as an escape from cultivation in the United States.

28264 to 28266.

From Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, June 25, 1910.

Roots of the following:

28264. (Undetermined.)

From mountains near Bacharden, Turkestan. "(No. 785, June 6, 1910.) A very ornamental, low-growing, perennial plant belonging to the Silenaceæ; it produces a mass of dark rosy-red flowers in early June. Grows between rocks and boulders on sunburned mountain sides; apparently prefers drained situations. Of value as a rockery plant in dry, hot regions." (*Meyer.*)

28265. CAPRIOLA DACTYLON (L.) Kuntze.

From Kizil Arvat, Turkestan. "(No. 787, June 2, 1910.) A crab-grass growing in the desert along the banks of dry rivers and irrigation canals. Seems to be the well-known Bermuda grass or a form of it. Recommended for testing as a lawn grass in dry and hot regions, as it forms a dense turf in its native haunts where camels and donkeys browse upon it." (*Meyer.*)

28266. EREMURUS ALTAICUS (Pall.) Stev.

From mountains near Bacharden, Turkestan. "(No. 788, June 5, 1910.) An ornamental Eremurus growing on dry mountain slopes between rocks and stony débris. It has columnar spikes of rosy-purple flowers. Probably of value as a garden ornamental in regions where aridity of the atmosphere prevails together with high summer and fairly low winter temperatures." (*Meyer.*)

28267 to 28273. IMPATIENS spp.

From Peradeniya, Ceylon. Presented by Mr. J. C. Willis, Director, Royal Botanic Garden. Received June 21, 1910.

Seeds of the following:

28267. IMPATIENS LATIFOLIA L.

Distribution.—Mountain slopes of the western peninsula of India from Konkan to Travancore, at an altitude of 3,000 to 7,000 feet, and in Ceylon and Java.

28268. IMPATIENS FLACCIDA Arnott.

Distribution.—Mountain slopes of the Malabar coast of southern India and in Ceylon, where it ascends to 3,000 feet.

28269. IMPATIENS GLANDULIFERA Arnott.

Distribution.—The Central Province of Ceylon at an altitude of 4,000 to 6,000 feet.

28270. IMPATIENS GIBBOSA Arnott.

Distribution.—Wooded slopes of the mountains in the Central Province of Ceylon, at an altitude of 5,000 to 8,000 feet.

28271. IMPATIENS MACROPHYLLA Gardn.

Distribution.—Wooded slopes of the mountains of Ceylon, at an altitude of 5,000 to 7,000 feet.

28272. IMPATIENS SULTANI Hook. f.

Distribution.—Introduced into cultivation from Zanzibar.

28273. IMPATIENS TRUNCATA Thwaites.

Distribution.—Wooded slopes of the mountains at an elevation of 4,000 to 6,000 feet in the Central Province of Ceylon.

28274. COFFEA ARABICA L.**Coffee.**

From Ponce, Porto Rico. Received through Mr. J. W. Van Leenhoff, agent and expert, Porto Rico Experiment Station, June 29, 1910.

Maragogipe. "This is a variety of coffee supposed to have originated as a mutation from the common Arabian coffee. It was discovered in Brazil about 1870. The leaves of this variety are much broader and the berries larger than in the ordinary type. The plants are very vigorous, but are usually shy bearers." (*G. N. Collins.*)

28275. MANGIFERA INDICA L.**Mango.**

From Miami, Fla. Presented by Messrs. Hickson Bros. Received June 23, 1910.

Cecil. "Form oblong, flattened, curving to a V-shaped beak about one-half inch from vertical center; size large or medium, about $4\frac{1}{2}$ by $2\frac{3}{8}$ by $2\frac{1}{4}$ inches; stem medium slender, fleshy at union with fruit; surface moderately smooth; color greenish yellow marbled with rich yellow; dots numerous, subcutaneous, green and gray; bloom whitish; skin medium thick, tenacious; seed long, flat; flesh yellow, rather tender, juicy, very little fiber; flavor sweet, pleasant, aromatic; quality good to very good; season probably four to six weeks earlier than *Sandersha*." (*W. N. Irwin.*) (Seed.)

28276 and 28277. MEDICAGO ARBOREA L.

From Maison Carree, Algeria. Presented by the Botanic Garden. Received June 30, 1910.

28276. (Cuttings.)

28277. (Seeds.)

28278. MEDICAGO SATIVA L.**Alfalfa.**

From Pinchow, Shensi, China. Presented by Mr. Berthold Laufer, Peking, who procured them from Mr. Nelson, China Inland Mission, Pinchow. Received June 28, 1910.

"The young plants of this are much used for greens, and eaten by the people. For fodder it is nearly all used green. The Chinese do not dry much clover for hay. As a rule it is cut three times throughout the summer, not reckoning when they first pick the tender plants for greens. I think this variety will grow on most any kind of soil." (Nelson.)

28279 to 28285.

From Mexico: Presented by Dr. J. N. Rose, associate curator, U. S. National Museum, Washington, D. C. Received June 20, 1910.

Seeds of the following; notes by Dr. J. N. Rose:

28279 to 28282. CUCURBITA spp.

28279. From San Blas. Collected by Messrs. Rose, Standley, and Russell, in 1910. "A climbing vine; fruit nearly globular, yellow streaked with narrow bands of white, 3 inches long."

28280. From Culiacan. Collected by Messrs. Rose, Standley, and Russell. "A climbing vine; fruit globular or a little broader than long, streaked with alternating bands of yellow and white, 2½ inches long."

28281. From Mazatlan. Collected by Messrs. Rose, Standley, and Russell, April 4, 1910. "A climbing vine; fruit egg shaped, 4 inches long, dark green with yellowish markings."

28282. From Acaponeta. "A climbing vine; fruit oblong, 3½ inches long, lemon yellow, with narrow stripes of white."

28283. MALVAVISCUS sp.

From Mazatlan. "Shrub or small tree 10 to 20 feet high with large cordate leaves. The scarlet flowers are very attractive and are followed by globular scarlet fruit. This tree is cultivated in patios at Mazatlan, and I would suggest trying these seeds in Florida and southern California. Only a few species of *Malvaviscus* are in cultivation, although most of the species are very attractive. I have been unable to identify the species, but it is a near relative of *Malvaviscus grandiflora*."

28284. MOMORDICA ZEYLANICA Mill.

From near Culiacan. Collected by Messrs. Rose, Standley, and Russell, in 1910. "A vine climbing to the height of 10 to 20 feet, forming a dense mass of foliage and producing an abundance of small orange-colored fruits which open, exposing the bright-scarlet seeds. More delicate and attractive than the other species in cultivation. A splendid climber for trellis work."

28285. TABEBUIA sp.

From Alamos. Collected by Messrs. Rose, Standley, and Russell, in 1910. "A tree 20 feet high. Produces an abundance of large yellow Catalpa-like flowers which appear before the leaves. The leaves are compound and somewhat like the horse-chestnut. It would be a desirable ornamental shrub or tree for the arid part of the Southwest. It is probably an undescribed species."

28286 to 28289.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received June 25, 1910.

Seeds of the following; notes by Mr. Regnard:

28286. *DOYYALIS HEBECARPA* (Gardn.) Warb.

"A fruit tree from Ceylon."

Distribution.—In the jungles of the Central Province of the island of Ceylon.

28287. *ANONA* sp.

"A species from Ceylon."

28288. *COMBRETUM COMOSUM* Don.

"Pretty, ornamental shrub."

Distribution.—Along Bagroo River in the vicinity of Sierra Leone in upper Guinea.

28289. *FLACOURTIA RAMONTCHI* L'Herit.

"A large-fruited thornless species."

See No. 26655 for previous introduction.

28290 to 28292. ANDROPOGON SORGHUM (L.) Brot.

Sorgo.

From Island of Tsungming, China. Obtained by Mr. D. MacGregor, superintendent, parks and open spaces, Shanghai, China. Received June 25, 1910.

Seeds of the following; quoted notes by Mr. Carleton R. Ball:

28290. Early variety. "Apparently typical. Spikelets obovate; glumes black and shining, pubescent at tip; awned."

28291. Late variety. "Same remarks apply to this as to the preceding (S. P. I. No. 28290). This is the only sample yet received in which the seeds were all plump and mature."

"The two preceding lots are similar to or probably identical with S. P. I. No. 28024."

28292. Light-colored variety. "This differs from the preceding numbers in having reddish-brown glumes. Very few of the seeds are developed. It is probably identical with S. P. I. No. 28025."

28293 and 28294. ANONA CHERIMOLA Miller.

Cherimoya.

From Nice, France. Presented by Dr. A. Robertson-Proschowsky. Received June 27, 1910.

28293. (Cuttings.)

28294. (Seeds.)

"A very hardy variety found in my garden. The seeds may reproduce this hardy strain. The fruits are of no value." (*Proschowsky.*)

28296 to 28303. MEDICAGO FALCATA × SATIVA.

Alfalfa.

Hybrid alfalfa plants. Parentage identical with S. P. I. No. 27742. Parents selected and hybrids made by Messrs. J. M. Westgate and W. J. Morse at the Arlington Experimental Farm during the summer of 1908. Numbered in the summer of 1910.

28296. Agrost. No. 2113. Sixth plant in row.

28297. Agrost. No. 2113. Seventh plant in row.

28298. Agrost. No. 2113. Eighth plant in row.

28296 to 28303—Continued.

28299. Agrost. No. 2113. Ninth plant in row.
 28300. Agrost. No. 2113. Tenth plant in row.
 28301. Agrost. No. 2113. Eleventh plant in row.
 28302. Agrost. No. 2113. Twelfth plant in row.
 28303. Agrost. No. 2113. Thirteenth plant in row.

28304 and 28305. ORYZA SATIVA L.**Rice.**

From Anam, French Indo-China. Procured by Mr. Miller Joblin, vice and deputy consul in charge, Saigon, Cochin China, from the chief of agricultural service in Anam. Received June 20, 1910.

Seeds of the following:

28304. *Lua Chum.* 28305. *Luachiem.*

28306 to 28324.

From Russia. Received through Prof. N. E. Hansen, Agricultural Experiment Station, Brookings, S. Dak., May 20, 1910.

Seeds of the following; notes by Professor Hansen:

28306. AGROPYRON CRISTATUM (L.) Beauv.

"(No. 262.) This is considered a very valuable grass. Native of the driest steppes of eastern Russia and a large part of Siberia. The chemical analysis of this plant has attracted the attention of the Russian Government agronomists, indicating a higher percentage of protein than alfalfa. If this holds true under cultivation in the United States, it may be a very valuable addition to our western grasses. Prof. R. W. Williams, of the Imperial Agricultural College at Moscow, Russia, is improving this species by selection from individual plants. The present sample is selection No. 1. The original seed was gathered from wild plants growing in the Turgai Province, the dry steppe region in western Asia just north of the Sea of Aral. This seed is from a single plant selected from the original plant raised at Moscow from this wild seed. Hence, the second generation under cultivation. The basis of selection in this selection No. 1 is a rather long and narrow inflorescence."

28307. AGROPYRON SIBIRICUM (Willd.) Beauv.

"(No. 272.) A grass native of the dry steppes of eastern European Russia and western Siberia. The present lot is selection No. 1, grown from a single plant, by Prof. R. W. Williams, of the Imperial Agricultural College, Moscow, Russia."

Distribution.—The trans-Caucasian provinces of southern Russia and eastward to the Altai Mountains in Siberia.

28308. AGROPYRON sp.

"(No. 275.) A native grass collected on the Russian Pamir plateau near the border of India in a six months' tour in 1899 by the late M. I. Toulinoff, assistant to Professor Williams at the Imperial Agricultural College, Moscow, Russia. The present sample is selection No. 1, by Professor Williams."

28309. TRIFOLIUM PRATENSE L.**Red clover.**

"(No. 280.) The native red clover from Uleaborg Province, Finland, from seed cultivated there about one hundred years. This is the original seed from the peasants, not cleaned or selected. Sample obtained from Professor Williams, Moscow."

28306 to 28324—Continued.

28310. TRIFOLIUM PRATENSE L.

Red clover.

"(No. 281.) The same notes as for No. 280 (S. P. I. No. 28309) apply to this, except that this sample is from the Vasa Province, Finland."

28311. TRIFOLIUM MONTANUM L.

"(No. 282.) Native clover of Moscow Province, Russia. This is No. 617 of the plant-breeding numbers of Professor Williams, of the Imperial Agricultural College of Moscow, Russia."

Distribution.—Southern Europe and western Asia, extending from Spain through Italy, Dalmatia, central Russia, and the Caucasus region to the Ural Mountains in Siberia and the Savalan Mountains in northern Persia.

28312. TRIFOLIUM PANNONICUM Jacq.

"(No. 283.) A wild clover from the village of Lutovka, Kharkof Province, southern Russia. Sample obtained by Professor Williams, of Moscow. Should prove hardier than the Hungarian form of this species."

Distribution.—Southern Europe, extending from northern Italy through the Balkan Peninsula and southern Russia to Asia Minor.

28313. TRIFOLIUM LUPINASTER L.

"(No. 284.) This is a selection made from seed of wild clover gathered near Tomsk, Siberia. The original wild form was very low, 1 to 1½ feet, consisting of a single stem. The present sample is selection No. 1, and is the third generation from one plant grown by Professor Williams, of the Imperial Agricultural College, Moscow, Russia; it is rather high and bushy, with slender stalks and plenty of leaves."

28314. PISUM SATIVUM L.

Pea.

Field variety. "(No. 288.) A remarkable mutation appearing in the plant-breeding experiments at the Imperial Agricultural College, Moscow, Russia. It is No. 576 of Professor Williams, and was selected by his assistant, Rozinsky. It forms a single stem with all the seed at the top with 50 per cent of the weight going to seed. Value undetermined."

28315. VICIA SATIVA L.

"(No. 289.) A native vetch from Pskov Province, near Beloscrsk in the Baltic Sea region south of St. Petersburg. The peasants grind it for bread. They say it is good food for the table as well as for fodder and grain. Seed obtained by Professor Williams, of Moscow."

28316. CUCURBITA MAXIMA Duch.

"(No. 290.) A field pumpkin from Simbirsk Province, eastern Russia. Sample procured by Professor Williams."

28317. PHYSALIS ALKEKENG L.

"(No. 291.) From seed saved by me from fresh fruit purchased in a bazaar at Samarkand, Turkestan, December, 1908. This is commonly sold strung on long threads. The bright-red inflated pods are quite ornamental."

Distribution.—Western Europe, through central Asia and in Japan; often cultivated.

28318. LATHYRUS TUBEROSUS L.

"(No. 292.) Seed gathered for me from plants growing wild in the dry steppe region at Orenburg in 1908 by courtesy of Mr. W. S. Bogdan, agronomist of the Turgai-Ural region, Orenburg Province, on the extreme eastern border of European Russia."

28306 to 28324—Continued.**28319. GLYCYRRHIZA GLANDULIFERA** Waldst. & Kit.**Wild licorice.**

“(No. 293.) A native forage plant from the dry steppe region of Orenburg. Seed gathered for me in 1908, from wild plants, by courtesy of Mr. W. S. Bogdan, agronomist of the Turgai-Ural region, Orenburg Province on the extreme eastern border of European Russia. A relative of the cultivated licorice plant.”

Distribution.—Southwestern Europe and southern Asia, extending from Greece through Persia, Turkestan, and Afghanistan to the province of Chihli in China.

28320. AVENA SATIVA L.**Oat.**

“(No. 294.) Seed obtained originally from Nizhni Novgorod Exposition; sample grown in Kherson Province, southern Russia. The present sample is from seed raised for ten years by Professor Williams, of the Imperial Agricultural College, Moscow, Russia; the first five years as a field crop and the second five in the plant breeding plats. Noted for extreme earliness. At first the grain was very small, but is now larger and considerably later.”

28321. SALSOLA ARBUSCULA Pallas.

“(No. 295.) A native plant of arborescent growth, from the sand dunes of the Bokhara, gathered for me by courtesy of Mr. W. Paletsky, in charge of the sand-dune planting of the Trans-Caspian Railroad, with headquarters at Chardchui, Turkestan. This plant is used as a sand binder to prevent the moving sands from encroaching on the track. These experiments show great originality and demonstrate the superiority of the native plants of Turkestan for this purpose. The onward march of the moving sands has been checked. Formerly these caused great expense in railway management.”

28322. HALOXYLON AMMODENDRON (Mey.) Bunge.

“(No. 296.) A native sand binder from Bokhara. Same source as No. 295 (S. P. I. No. 28321).”

28323. CALLIGONUM CAPUT-MEDUSAE Schrenk.

“(No. 297.) A native sand binder from Bokhara. Same source as No. 295 (S. P. I. No. 28321).”

28324. TRIFOLIUM PANNONICUM Jacq.

“(No. 113.) This is usually called Hungarian clover, a perennial allied to red clover, but earlier and less tender in foliage. This present sample deserves especial attention because it is as found wild in the Kharkof Province, southern Russia. It should prove hardier than the Hungarian form of the species.”

PUBLICATION OF A NEW NAME.

27520. CERVICINA UNDULATA (L. f.) Skeels.

NOTE.—It seems desirable to call attention here to an unusual application of the name *Ziziphus jububa* in conformity with the accepted rules of specific nomenclature. See Introduction Nos. 28129 and 28130.

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U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 223.

B. T. GALLOWAY, *Chief of Bureau.*

Mr. Herlan.

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM JULY 1
TO SEPTEMBER 30, 1910:

INVENTORY No. 24; Nos. 28325 to 28880.

ISSUED NOVEMBER 27, 1911.



WASHINGTON:
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BUREAU OF PLANT INDUSTRY.

Chief of Bureau, BEVERLY T. GALLOWAY.

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., June 6, 1911.

SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 223 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from July 1 to September 30, 1910: Inventory No. 24; Nos. 28325 to 28880."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

WM. A. TAYLOR,
Acting Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.

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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1910: INVENTORY NO. 24; NOS. 28325 TO 28880.

INTRODUCTORY STATEMENT.

No satisfactory test can be made of a new plant to determine its economic value until many months, or even years, have passed since its introduction. To emphasize those included in this inventory before they are tested may therefore appear somewhat premature, but it seems warranted for the reason that while in the printed descriptions new plants which arrive may seem much alike and equally interesting, to those who see all the correspondence which has led up to their introduction some of the new arrivals stand out as of special promise.

Those interested in the cover-crop problem of the California orange growers will notice the importation of a half ton of seed of the Palestine kirsenneh (*Vicia ervilia*, No. 28761) and 500 pounds of seed of another Palestine legume (*Lathyrus sativus*, No. 28762), and will note also the opinion expressed by Mr. Aaron Aaronsohn that the *Lathyrus* will make a quicker growth in the California orange orchards than *Vicia ervilia* and will have an advantage over the fenu-greek that is now used there in that seed can be obtained cheaper.

The unusual interest in the mango in Florida, Porto Rico, and Hawaii has made it desirable to get the best East Indian varieties as rapidly as possible to increase the collection, which now numbers more than a hundred sorts. Some of these are early and others late ripening sorts; others have unusual keeping qualities; while still others are in the form of seeds imported for the purpose of originating new varieties. As pointed out by Mr. Walter T. Swingle in his citrus work, seeds like the mango, which are polyembryonic, are likely to give rise through the unfertilized embryos to strains of the original variety, which are characterized by increased vigor and productiveness.

So much interest has been aroused in the possibilities of the oriental persimmon through the introduction of the Tamopan variety and the perfection by Mr. H. C. Gore, of the Bureau of Chemistry, of new methods by which the tannin can be rendered insoluble in a practical way and the fruit hold its firm texture that a special search is being

made for all the species of *Diospyros* which may in any way be of value for breeding purposes or as a stock. Special interest may attach to *Diospyros peregrina* (No. 28584), from Sibpur, Calcutta, from the fact that the expressed juice when boiled with powdered charcoal is used on a large scale for paying the bottoms of boats and that an excellent glue is made from the juice by the natives of the Malabar coast. *Diospyros montana cordifolia* (No. 28684), a tree which is found from the Himalayas to Australia and which bears small fruits the size of cherries, and *Diospyros microcarpa* from Australia (No. 28343) have also been secured.

Two strains of maize from the Kalahari Desert region of South Africa (Nos. 28614 and 28615) and a form from Zomba, Nyasaland Protectorate (No. 28661), may interest the corn breeders.

Dr. A. Weberbauer, whose collections in the Peruvian Andes are well known, has sent two wild forms of *Solanum* from the region about Lima. One, which he believes to be *Solanum maglia*, is from the cool, cloudy Loma region and the other from the same vegetation zone is an undetermined form (Nos. 28656 and 28657).

Western China is known to have many wild species of *Rubus*, some of which are reported to bear fruit of unusual excellence. The vigor of the Chinese brambles and the early-ripening habit of certain of those already introduced have attracted the attention of plant breeders in this field, and the introduction of a species from the top of Mount Omei, on the Upper Yangtze, described by the sender, Dr. Edgar T. Shields, of Yachow, as "a delicious large yellow raspberry" can scarcely fail to attract their attention.

Two of the best fruits of the Malay Archipelago are the ramboetan and the kapoelasan, species of *Nephelium*. A Wardian-case shipment has been made from Java, containing three varieties of the latter (Nos. 28332 to 28334) and seven varieties of the former (Nos. 28335 to 28341), and an attempt will be made to propagate these on various stocks for distribution in Porto Rico, Hawaii, and the Panama Canal Zone.

Dr. L. Trabut, the veteran experimenter of Algiers, has sent in seeds of the remarkably alkali-resistant grass *Festuca fenas* (No. 28355) from the Shott Khreida.

A collection of medicagos and trifoliums from Beirut, Turkey, containing six species (Nos. 28788 to 28793) will be of use to those breeding these leguminous plants.

The khat plant of Yemen, on the west coast of Arabia, has been in cultivation for generations. Its fresh leaves are chewed by the Arabs almost universally in that region. To them life and hard work would be unendurable without khat, and every coolie, even the poorest, buys the leaf. The plant yields a marketable crop the sec-

and year, is grown from cuttings, and is considered one of the most valuable cultures of the country. Plants have been secured and are now growing both from the Edinburgh Botanic Gardens and also direct from Aden, Arabia, through Mr. C. K. Moser, the American consul, who has furnished an interesting report on the industry. It is quite probable that this plant will grow in our southwestern country, but until the chemists and animal physiologists have closely examined the action of the alkaloid it contains, it will not be distributed to experimenters.

Picea breweriana of Oregon and California, which because of its appearance may be called the veiled spruce, is one of the rarest of all the spruces, and the seeds, though sought after many times, have so rarely been obtained that the distribution of more than a pound of fresh seed, received from Miss Alice Eastwood, is of unusual interest.

The nomenclature in this inventory and the notes on geographical distribution have been prepared in the Office of Taxonomic and Range Investigations by Mr. H. C. Skeels, under the direction of Mr. Frederick V. Coville. The inventory was prepared by Miss Mary A. Austin, of this office.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., April 24, 1911.

INVENTORY

28325 and 28326. AGAVE spp.

Zapupe.

From Tampico, Mexico. Purchased from Mr. Mordelo L. Vincent. Received July 5, 1910.

Suckers of the following:

28325. AGAVE LESPINASSEI Trelease.

Vincent. "A fiber-producing agave, similar in appearance to sisal, with leaves 4 to 5 feet long, light green, armed with reddish marginal spines. Yields its first crop of leaves for fiber three to five years after planting and annual or semiannual crops thereafter for three to five years. The fiber is of the same class as the sisal of commerce, but is finer and more flexible.

"This variety, developed on the island of Juana Ramirez, is regarded as one of the best of the half-dozen different kinds of zapupe cultivated in that region. It can be cultivated successfully only in places free from severe frost in winter." (*Lyster H. Dewey.*)

28326. AGAVE ZAPUPE Trelease.

Estopier. "A fiber-producing agave, similar in appearance to the henequen cultivated in Yucatan, but with more slender leaves. The leaves are 4 to 5 feet long, glaucous, and with dark-reddish marginal spines. The first crop of leaves may be cut three to five years after planting and annually or semiannually thereafter for three to five years, when the plant will send up a flower stalk bearing bulbils and then die. It may be propagated by both bulbils and suckers. The fiber is similar to sisal and may be used for the same purposes, viz, binder twine and other hard-fiber twines.

"Cultivated most extensively in the vicinity of Tuxpam, Vera Cruz, Mexico, where it is called '*zapupe azul*' because of its bluish leaves. The variety *Estopier* has been improved somewhat by cultivation. Like all of the agaves cultivated for the production of fiber, it requires a climate practically free from frost." (*Lyster H. Dewey.*)

28327. CATHA EDULIS Forsk.

Khat.

From Edinburgh, Scotland. Presented by the regius keeper, Royal Botanic Garden. Received July 5, 1910.

Plants. See No. 24714 for previous introduction, and No. 28825 for description.

28328 to 28330.

From Kandawglay, Rangoon, Burma, India. Presented by the secretary of the Agri-Horticultural Society of Burma. Received July 2, 1910.

Seeds of the following:

28328. PHYLLANTHUS EMBLICA L.

Emblie myrobalan.

See No. 25724 for description.

28329. TERMINALIA BELLERICA (Gaertn.) Roxb.

Belleric myrobalan.

See No. 25541 for description.

28330. TERMINALIA CHEBULA Retz.

Black myrobalan.

See No. 25542 for description.

28331. ANDROPOGON SQUARROSUS L. f.**Cuscus grass.**

From Peradeniya, Ceylon. Presented by Mr. M. Kelway Bamber, government chemist. Received July 2, 1910.

Clumps.

"This plant grows in large dense tufts, with stout, spongy, aromatic roots, which are sparingly branched. It is grown to a considerable extent in the hills of Jamaica for the purpose principally of binding loose soils and forming embankments on steep hill-sides to prevent washing by rains.

"In India the roots are used in making aromatic-scented mats, and also fans, baskets, and other articles. The roots also when distilled with water yield a fragrant oil which is used as a perfume. Used also as medicine in case of fever and bilious complaints." (Extract from *Botanical Department of Jamaica Bulletin B. S. vol. 7, 1900, pp. 152-153.*)

Distribution.—Throughout the plains and lower hills of India and Burma, rising to an elevation of 4,000 feet, and in Ceylon and Java, and tropical Africa.

28332 to 28341. NEPHELIUM spp.

From Buitenzorg, Java. Presented by the Director of Agriculture. Received July 2, 1910.

Plants of the following; notes by Mr. F. W. J. Westendorp in "Teysmannia," 1910:

28332 to 28334. NEPHELIUM MUTABILE Bl.

Kapoelasan.

28334. *Si babat.* "Dark colored, almost black; not so common as some other varieties."

28335 to 28341. NEPHELIUM LAPPACEUM L.

Ramboetan.

28335. *Atjeh lebak boeloes.* "This variety, a ramboetan of the second rank, is handled in large quantities."

28336. *Atjeh goela batoe.* "A variety of the first class, but can not be obtained in large quantities."

28337. *Atjeh tangkoeveh.*

28338. *Atjeh si konto.* The same remarks apply to this as to No. 28335.

28339. *Atjeh lengkeng.*

28340. *Si njonja.*

28341. *Atjeh matjan.*

"The two preceding ramboetans are of the first class and are the best commercial varieties."

For a general note on these fruits, see Nos. 25163 and 25165.

28342. COMBRETUM APICULATUM Sonder.

From Komati Poort, Transvaal, South Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria. Received July 5, 1910.

"Seed collected by me at an altitude of 600 feet. The climate is almost tropical and free from frost, the tamarind being grown there. I am not aware that this Combretum has any economic value beyond the fact that it is ornamental; it would be of interest in a tree collection in Florida, Louisiana, or southern California." (Davy.)

Distribution.—In the woods in the vicinity of Magaliesberg, in the Transvaal region of South Africa.

28343. DIOSPYROS MICROCARPA (Jacq.) Gurke.

From Sydney, New South Wales. Presented by Prof. J. H. Maiden, director and government botanist, Botanic Gardens. Received July 6, 1910.

"A large shrub or tree 20 to 40 or even 100 feet high; trunk sometimes 2 feet in diameter. Leaves oblong or oval, alternate, palish green, especially beneath. Flowers diœcious, tetramerous (or rarely trimerous). Fruit globular or ovoid, $\frac{1}{2}$ to $\frac{3}{8}$ inch thick, fuscous and glabrescent when ripe; edible; ultimately one-celled and one-seeded. Slender-growing tree with elongated trunk and elegant, rigid foliage. Wood close, very tough and firm." (*Extract from Hiern's Monograph of Ebenaceæ, in Transactions of the Cambridge Philosophical Society, vol. 12, p. 246.*)

Distribution.—In the forest region along the coast in New South Wales and Queensland, Australia.

28344. CROTALARIA CANDICANS Wight and Arnott.

From Poona, Bombay, India. Presented by Mr. P. S. Kanetkar, superintendent, Empress Botanical Gardens. Received July 9, 1910.

"This crop is used for green manuring in the Madras Presidency. Out of that presidency it is not known." (*Kanetkar.*)

"A copiously branched undershrub, attaining 4 feet in height, with short-petioled leaves and panicles of bright-yellow flowers, produced in great profusion at the beginning of January. It thrives in any fair garden soil and is propagated by seed." (*Extract from Woodrow's Gardening in India, p. 277.*)

Introduced for experimental growing as a cover crop, for breeding purposes, and as an ornamental in our Southern States.

Distribution.—Slopes of the Nilgiri and Madura Hills, in the southern part of India.

28345. VICIA FABA L.**Horse bean.**

From Dongola Province, Egypt. Presented by Mr. S. E. Durant, inspector of agriculture, at the request of the Director of Agriculture and Lands, Sudan Government, Khartum. Received July 7, 1910.

"This grain is never used for stock feed, but it is ground into flour and mixed with wheat flour, then baked into bread. The straw is fed to stock, the only preparation being that the grain is first thrashed out by hand. The natives do not consider that bean straw forms such a valuable fodder as that of wheat." (*Durant.*)

28346 to 28350. ORYZA SATIVA L.**Rice.**

From Philippine Islands. Received through Mr. William S. Lyon, Manila, July 1, 1910.

Seeds of the following; native names and notes as given by Mr. Lyon:

28346. *Inaplaya.* Matures in $4\frac{1}{2}$ months.

28347. *Inita.* One of the earliest; often matures in 100 days.

28348. *Dinalaga.* Late; matures in 4 to $4\frac{1}{2}$ months.

28349. *Minalit.* Very late; matures in 5 or more months.

28350. *Pimling-berto.* Medium; matures in 4 to $4\frac{1}{2}$ months.

28351. DIOSPYROS DISCOLOR Willd.**Mabola.**

From Buitenzorg, Java. Presented by the Director of Agriculture. Received July 14, 1910.

Seeds. See No. 26112 for description.

28352. DIOSPYROS sp.

From Baroda, Madras Presidency, India. Presented by Mr. B. S. Cavanaugh, superintendent, State Gardens. Received July 14, 1910.

Seeds.

28353. PASSIFLORA EDULIS Sims.

Passion flower.

From Madras Presidency, India. Presented by Mr. P. S. Kanetkar, superintendent, Empress Botanical Gardens, Poona, Bombay, India. Received July 14, 1910.

"Edible passion fruit grown for culinary purposes." (*Kanetkar.*)

28354. TERMINALIA CHEBULA Retz.

Black myrobalan.

From Baroda, India. Presented by Mr. B. S. Cavanaugh, superintendent, State Gardens. Received July 5, 1910.

See No. 25542 for description.

28355 and 28356.

From Algeria. Presented by Dr. L. Trabut, Algiers. Received July 5 and 11, 1910.

Seeds of the following; notes by Dr. Trabut:

28355. FESTUCA FENAS Lagasca.

"Grows in the very alkaline regions of Shott Khreida. This grass has a very remarkable resistance to alkalinity."

Distribution.—Southwestern Europe, extending from central Spain and southern France eastward to Croatia.

28356. VICIA FABA L.

Horse bean.

"Grows wild on the plateau of Sersou, Algeria."

28357. MELILOTUS SEGETALIS (Brot.) Ser.

From Maison Carree, Algeria. Presented by the Botanic Garden. Received July 5, 1910.

"This is a small, sparsely leaved annual melilot, native of Mediterranean Europe and Africa. It was originally described from Portugal. In former tests carried on by the Office of Forage-Crop Investigations of the Bureau of Plant Industry it has attained a height of only 10 to 15 inches and its small growth makes it of doubtful value for the United States. This melilot has been received previously under S. P. I. Nos. 17003 and 27473." (*H. N. Vinal.*)

28358. CROTALARIA CANDICANS Wight and Arnott.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received July 14, 1910.

See No. 28344 for description.

28359. MEDICAGO SATIVA L.

Alfalfa.

From Ecuador. Procured by Mr. Herman R. Dietrich, consul general, Guayaquil. Received July 14, 1910.

Guaranda.

28360 to 28363.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received July 7, 1910.

Seeds of the following; notes by Mr. Regnard:

28360. *ERYTHROXYLON LAURIFOLIUM* Lam. "Mauritius torchwood."

Distribution.—A branching shrub common in the woods in the islands of Mauritius and Reunion and the Seychelles.

28361 and 28362. (Undetermined.) (Liliaceæ.)

28361. "Blue fruited."

28362. "White fruited."

28363. (Undetermined.)

"Forest tree bearing scarlet berries."

28364. GOSSYPIUM sp.**Cotton.**

From Honduras. Presented by Mr. F. S. Chaffee, Trujillo, Honduras. Received July 8, 1910.

"This is supposed to be wild cotton from the Aguan River, 25 miles east of here (Trujillo). I found it three years ago while hunting in that vicinity. At that time it was a tree some 8 or 9 inches in diameter and 25 or 30 feet high and full of bloom. It stood out in the middle of a savannah in a sand and gravel soil with no other trees around it and fully a mile from any house. No one in that vicinity has any knowledge of its origin or how long it has been there; but last fall it was burned down by a savannah fire. These bolls were taken from the sprouts that have come up from the roots. There are also two or three other trees about a mile apart located in the heavy forest." (Chaffee.)

28365. TRITICUM AESTIVUM L.**Wheat.**

From near the shore of Lake Van, a few miles from Bitlis, Turkey in Asia.

Presented by Mr. Hamilton King, American minister to Siam, who procured it from Miss A. C. Ely. Received July 12, 1910.

"This is sown in drills and does not need to be irrigated. The soil is sandy, mixed with volcanic ashes, and probably some moisture percolates from the near-by lake. This is a rather inferior sample." (Ely.)

28367 and 28368.

From Marash, Turkey. Purchased from Mr. Paul N. Nersessian. Received July 16, 1910.

Seeds of the following; notes by Mr. Nersessian:

28367. *LATHYRUS SATIVUS* L.

"*Agh jilban* (white jilban). For cultivation, soil, and time and manner of sowing, see No. 28368."

28368. *VICIA ERVILIA* (L.) Willd.

Bitter vetch.

"*Koushne*. They do not cultivate these plants for green manuring but only for seeds which they use for cattle feed. The seed is sown here from about the middle of September until near the end of November. It sprouts or stools some in the fall and remains that way during the winter. In the spring it sprouts more, covers the ground perfectly, grows about a foot high, and is ripe enough to harvest in these days (about June 1?). Usually it is sown on poor or exhausted fields from which a good crop of grain can not be expected. Of course it does

28367 to 28368—Continued.

better in richer ground and especially in ground where potash predominates. The usual practice in sowing it around here is to irrigate the grain stubble field if there has not been rain enough, to sow nearly a bushel of seed to an acre right on the stubble and just cover the seeds with the old native plow, and then drag a pole over the field to smooth it somewhat, which of course helps the seeds to come up more evenly and also decreases the surface evaporation. It is sown broadcast. It likes the ground well drained, either naturally or artificially, and the earlier it is sown the better it is, within the time mentioned."

28369. BAMBOS ARUNDINACEA Retz.**Bamboo.**

From Sibpur, Calcutta, India. Purchased from Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received July 16, 1910.

"This bamboo does not spread rapidly and it is seldom necessary to keep the plant in check. It never becomes a troublesome weed, and it can be extirpated without difficulty, if desired." (*Gage.*)

See No. 21317 for further description.

28370. PICEA BREWERIANA S. Watson.**Veiled spruce.**

From near Kerbyville, which is reached by stage from Grants Pass, Oreg. Collected by Mrs. A. J. Adams; purchased from Miss Alice Eastwood, Gray Herbarium, Harvard University, Cambridge, Mass. Received July, 1910.

"This is one of the rarest and most unique of all the spruces. It grows only on the summit of the Siskiyou Mountains of northern California and southern Oregon. I saw some small trees on Canyon Creek in Trinity County and I should call the tree the veiled spruce rather than the weeping spruce. It grows to quite a height, 70 or 80 feet, and with a diameter of 1 to 2 feet. The drooping branches are clothed with long pendent, slender branchlets. The tree is delicate and graceful in outline, but not funereal or sad. The cones resemble those of the Norway spruce." (*Eastwood.*)

Distribution.—Dry mountain ridges and peaks near the timber line on both slopes of the Siskiyou Mountains on the boundary between California and Oregon at an elevation of 7,000 feet, and on the Oregon coast ranges at the headwaters of the Illinois River, at an elevation of 4,000 to 5,000 feet.

28371 to 28531.

The following material presented by Dr. Walter Van Fleet to the Plant Introduction Garden, Chico, Cal. Numbered July, 1910. Notes by Dr. Van Fleet.

A collection made by Dr. Van Fleet, at Little Silver, N. J., and selected by him out of many thousands as especially valuable for breeding purposes in the various groups represented. Many of them are his own hybrids or crosses. The technical descriptions of the various species have been omitted for the sake of brevity.

28371. ALBIZZIA JULIBRISSIN Boviñ.

(P. I. G. No. 6460.) "Seedlings from a tree 20 feet high growing in Monmouth County, N. J., little injured by winter temperatures as low as -12° F. Evidently a hardy type."

Distribution.—Mountains of northern Persia, India, northern China, and Japan; cultivated as an ornamental tree in Asia, southern Europe, northern Africa, and the United States.

28371 and 28531—Continued.

28372. *ANTHOLYZA* sp.

(P. I. G. No. 6225.) "Received from Natal, South Africa, as *Gladiolus* sp., possibly *Antholyza paniculata*."

28373. *AQUILEGIA OXYSEPALA* × *CANADENSIS*.

(P. I. G. No. 6222.) "A hardy and long-lived hybrid, dwarf and early blooming; flowers wine red and white."

28374. *ZANTEDESCHIA ELLIOTTIANA* × *PENTLANDII*.

(P. I. G. No. 6534.) "A weak-growing hybrid; spathes pure golden yellow."

28375. *ZANTEDESCHIA REHMANNI* × *PENTLANDII*.

(P. I. G. No. 6533.) "Vigorous hybrids with lanceolate, spotted foliage; spathes pale yellow or white, overlaid with purple and rose shadings."

28376. *ZANTEDESCHIA REHMANNI* × *PENTLANDII*.

(P. I. G. No. 6299.)

28377. *AZALEA NUDIFLORA* × *SINENSIS*.

(P. I. G. No. 6442.) "Vigorous hybrids with profuse cream, rose and salmon colored blooms."

28378. × *BERBERIS STENOPHYLLA* Lindl.

(P. I. G. No. 6493.) "A very ornamental evergreen variety."

28379. *BERBERIS THUNBERGII* × *VULGARIS*.

(P. I. G. No. 6302.)

28380. *BERBERIS THUNBERGII* × *VULGARIS*.

(P. I. G. No. 6494.) "Third-generation plants from original hybridization."

28381. *CASTANEA PUMILA* × *SATIVA*.

(P. I. G. No. 6227.) This introduction had previously been assigned No. 26233, so the number 28381 will be discarded and 26233 used.

28382. *CELASTRUS ARTICULATUS* Thunb.

(P. I. G. No. 6425.) *Distribution*.—In the provinces of Chihli, Shantung, Kiangsu, Kiangsi, Hupeh, and Kwangtung in China, in Chosen and the Korean and Nansei archipelagoes, and in the vicinities of Kiushu, Nagasaki, Yokosuka, Shimoda, and Hakodate in Japan.

28383. *CITRUS TRIFOLIATA* L.

(P. I. G. No. 6447.) "Taken from a tree growing in Monmouth County, N. J. Has endured -8° F. without injury."

28384. *DEUTZIA SCABRA* × *DISCOLOR*.

(P. I. G. No. 6549.) "One-year seedlings."

28385. *FRAGARIA FILIPENDULA* Hemsl. (?)

(P. I. G. No. 6566.)

28386. *FRAGARIA INDICA* Andrews.

(P. I. G. No. 6567.)

28387. *FRAGARIA MOSCHATA* Duchesne. (?)

(P. I. G. No. 6573.)

28388. *FRAGARIA* sp.

(P. I. G. No. 6568.) *Alfonso* × *filipendula*.

28389. *FRAGARIA* sp.

(P. I. G. No. 6219.) *Alfonso XIII* × *President*.

28371 to 28531—Continued.

28390 to 28396. *FREESIA REFRACTA* (Jacq.) Klatt.

28390. (P. I. G. No. 6211). "*×* *Freesia arbutus* (*F. leichtlinii* *×* *armstrongi*)."

"An undisseminated hybrid; has large, sweet-scented, rosy lilac blooms, disposed in a conspicuous 2-ranked scape."

28391. (P. I. G. No. 6414.) "*F. armstrongi* *×* commercial *Refracta alba*."

28392. (P. I. G. No. 6385.) "*F. armstrongi* *×* *Purity* (*Refracta alba*)."

28393. (P. I. G. No. 6224.) "*F. aurea* *×* (*chapmani* *×* *armstrongi*)."

28394. (P. I. G. No. 6450.) "*F. chapmani* (*F. aurea* *×* *refracta*)."

"The finest yellow-flowered *Freesia*; raised in England."

28395. (P. I. G. No. 6196.) "*F. refracta* *×* *armstrongi* (selected)."

28396. (P. I. G. No. 6213.) "*F. refracta* *×* *armstrongi* (good variety)."

28397. *GERBERA JAMESONI* Bolus.

(P. I. G. No. 6461.) See No. 25513 for description.

28398. *GLADIOLUS ALATUS* L.

(P. I. G. No. 6206.) *Distribution*.—The southwestern provinces of Cape Colony and in Namaqualand, South Africa.

28399. *GLADIOLUS ALATUS* *×* *CARDINALIS*.

(P. I. G. No. 6215.)

28400. *GLADIOLUS ALATUS* *×* *COLVILLII* (*Delicatissima*).

(P. I. G. No. 6378.)

28401 to 28429. "Various undisseminated hybrid gladioli and parent species."

28401. *GLADIOLUS ALATUS* *×* *PRIMULINUS*.

(P. I. G. No. 6536.)

28402. *GLADIOLUS ALATUS* *×* *PRIMULINUS* (*Goldbug*).

(P. I. G. No. 6535.)

28403. *GLADIOLUS ALATUS* *×* *TRISTIS*.

(P. I. G. No. 6208.) "Green flowered."

28404. *GLADIOLUS BYZANTINUS* Miller.

(P. I. G. No. 6207.) Variety *albus*. *Distribution*.—The countries bordering on the Mediterranean Sea.

28405. *GLADIOLUS BYZANTINUS* (*albus*) *×* *PRIMULINUS*.

(P. I. G. No. 6199.)

28407. *GLADIOLUS CARDINALIS* Curtis.

(P. I. G. No. 6214.) *Queen Wilhelmina*.

28408. *GLADIOLUS CARDINALIS* *×* *GRANDIS*.

(P. I. G. No. 6203.)

28409. *GLADIOLUS CARDINALIS* *×* *PRIMULINUS*.

(P. I. G. No. 6386.)

28410. *GLADIOLUS COLVILLII* (*Bride*) *×* *PURPUREO-AURATUS* (*Klondike*).

(P. I. G. No. 6201.)

28371 to 28531—Continued.

28401 to 28429—Continued.

28411. *GLADIOLUS CRUENTUS* Moore.

(P. I. G. No. 6524.) *Distribution*.—Known only from Natal on the east coast of South Africa.

28412. *GLADIOLUS CRUENTUS* × a selected dark-red seedling.

(P. I. G. No. 6528.)

28413. *GLADIOLUS GRANDIS* × *ALATUS*.

(P. I. G. No. 6198.)

28414. *GLADIOLUS GRANDIS* × *PRIMULINUS*.

(P. I. G. No. 6200.)

28415. *GLADIOLUS PAPILO* × "*Precious*."

(P. I. G. No. 6529.)

28416. *GLADIOLUS PRIMULINUS* × "*Goldbug*."

(P. I. G. No. 5527.)

28417. *GLADIOLUS PRIMULINUS* × *GRANDIS*.

(P. I. G. No. 6537.)

28418. *GLADIOLUS* sp. (No. 74) × *PRIMULINUS*.

(P. I. G. No. 6384.)

28419. *GLADIOLUS PSITTACINUS* × "*Very Odd*."

(P. I. G. No. 6530.)

28420. *GLADIOLUS PURPUREO-AURATUS* (*Klondike*) × *CARDINALIS* (*Delicatissima*).

(P. I. G. No. 6538.)

28421. *GLADIOLUS QUARTINIANUS* A. Rich.

(P. I. G. No. 6526.) *Distribution*.—Mountains of tropical Africa from Abyssinia southward to Zambesia, Matabeleland, and Angola, rising to an elevation of 8,000 feet in Kassailand.

28422. *GLADIOLUS QUARTINIANUS* × (?).

(P. I. G. No. 6531.)

28423. *GLADIOLUS RAMOSUS* (*Ne plus ultra*) × *COLVILLII* (*Express*).

(P. I. G. No. 6379.)

28424. *GLADIOLUS SALMONEUS* Baker.

(P. I. G. No. 6525.) *Distribution*.—Occurs at an elevation of 4,800 feet on the mountain slopes in the vicinity of Kokstad, in Griqualand, eastern part of Cape Colony.

28425. *GLADIOLUS SALMONEUS* × *QUARTINIANUS*.

(P. I. G. No. 6204.)

28426. *GLADIOLUS TRISTIS* × *COLVILLII*.

(P. I. G. No. 6377.)

28427. *GLADIOLUS TRISTIS* × *VITTATUS*.

(P. I. G. No. 6451.)

28428. *GLADIOLUS VITTATUS* × *PRIMULINUS*.

(P. I. G. No. 6197.)

28429. *GLADIOLUS WATSONIUS* × *GRANDIS*.

(P. I. G. No. 6202.)

28371 to 28531—Continued.**28430.** *HIBISCUS SYRIACUS* L.

(P. I. G. No. 6546.) "A single-flowered, pure white seedling."

28431. *HEMEROCALLIS AURANTIACA* (MAJOR) $\times$ *CITRINA*.

(P. I. G. No. 6519.)

28432. *HEMEROCALLIS MAGNIFICA* Hort.

(P. I. G. No. 6300.)

28433. *HEMEROCALLIS MAGNIFICA* $\times$ *FLORHAM*.

(P. I. G. No. 6298.)

28434. *HIPPEASTRUM RUTILUM* $\times$ *VITTATUM*.

(P. I. G. No. 6423.) "Fine, red-flowered varieties, blooming when foliage is fully developed."

28435. *HIPPEASTRUM VITTATUM* $\times$ (?).

(P. I. G. No. 6413.)

28436. *IRIS ATROPURPUREA ATROFUSCA* Baker.

(P. I. G. No. 6397.)

28437. *IRIS ATROPURPUREA* Baker.(P. I. G. No. 6458.) *Distribution*.—Imported from Syria.**28438.** *IRIS BARTONI* Foster.(P. I. G. No. 6469.) *Distribution*.—The vicinity of Kandahar in the southern part of Afghanistan.**28439.** *IRIS BISMARCKIANA* Baker.(P. I. G. No. 6402.) *Distribution*.—The province of Lebanon, on the coast of the Mediterranean Sea, in Asiatic Turkey.**28440.** *IRIS CRISTATA* Soland.(P. I. G. No. 6459.) *Distribution*.—Rich woods from Maryland to Georgia and westward to Ohio, Indiana, and Missouri.**28441.** *IRIS DELAVAYI* $\times$ *SIBIRICA*.

(P. I. G. 6517.)

28442. *IRIS FULVA* Ker.

(P. I. G. No. 6516.) "A very large-flowered copper iris, bred by selection from the wild plant."

Distribution.—In swamps from Kentucky and Illinois southward to Missouri.**28443.** *IRIS GRACILIPES* A. Gray.(P. I. G. No. 6466.) *Distribution*.—In damp meadows in Nambu and in the vicinity of Hakodate on the island of Hokushu (Yezo), Japan.**28444.** *IRIS GRANT-DUFFII* Baker.(P. I. G. No. 6523.) *Distribution*.—Along the banks of the River Kishon in Palestine.**28445.** *IRIS HELENÆ* Barbey.(P. I. G. No. 6396.) *Distribution*.—In the vicinities of El Arish, Ouadi-el-Gradi, Ouadi-Cheriah, and Nachel Aboukeila, in the desert between Egypt and Palestine.**28446.** *IRIS HEXAGONA* $\times$ *MISSOURIENSIS*.

(P. I. G. No. 6463.)

28371 to 28531—Continued.**28447. IRIS HIMALAICA Hort.**

(P. I. G. No. 6470.) Received in 1908 from Mr. W. R. Dykes, England. Not bloomed. This is probably *Iris clarkei* Baker, a native of Sikkim, India.

28448. IRIS LAEVIGATA Fisch.

(P. I. G. No. 6303.) *Distribution*.—In the vicinity of Yokosuka, Shimoda, and Hakodate in Japan; in the province of Shengking, China, and near Port Chusan in Chosen (Korea). Also extensively cultivated in other countries.

28449. IRIS KOROLKOWI Regel.

(P. I. G. No. 6401.) *Distribution*.—Sent alive by Gen. Korolkow to St. Petersburg in 1870 from Turkestan.

28450. IRIS PARADOXA × PUMILA.

(P. I. G. No. 6421.) "Very meritorious hybrids. Plants vigorous, free blooming, and of easy culture."

28451. IRIS LACUSTRIS Nutt.

(P. I. G. No. 6467.) *Distribution*.—Gravelly shores of Lakes Huron, Michigan, and Superior.

28452. IRIS LORTETII Barbey.

(P. I. G. No. 6399.) *Distribution*.—On the slopes of the Lebanon range of mountains at an altitude of 2,000 feet, between Mais and Hussin, in the province of Lebanon, Asiatic Turkey.

28453. IRIS MILESII × TECTORUM.

(P. I. G. No. 6380.)

28454. IRIS MILESII × TECTORUM.

(P. I. G. No. 6464.)

28455. IRIS MONNIERI DC.

(P. I. G. No. 6518.) *Distribution*.—The islands of Rhodes and Crete, in the eastern part of the Mediterranean.

28456. IRIS OBTUSIFOLIA Baker.

(P. I. G. No. 6520.) *Distribution*.—The province of Mazanderan, on the southern shore of the Caspian Sea, in Persia.

28457. IRIS PALLIDA Lam.

(P. I. G. No. 6462.) *Distribution*.—The islands of Crete and Rhodes, and in Palestine, Syria, and Morocco, rising to an elevation of 7,000 feet in the Atlas Mountains.

28458. IRIS NIGRICANS Hort.

(P. I. G. No. 6400.)

28459. IRIS PARADOXA × SAMBUCINA.

(P. I. G. No. 6465.)

28460. IRIS SIBIRICA × (?).

(P. I. G. No. 6446.)

28461. IRIS SIBIRICA × (?).

(P. I. G. No. 6521.)

28462. IRIS SIBIRICA × DELAVAYI.

(P. I. G. No. 6301.)

28371 to 28531—Continued.**28463.** *IRIS SOFARANA* Foster.(P. I. G. No. 6398.) *Distribution*.—On the Lebanon Mountains in the vicinity of Ain Sofar, Asiatic Turkey.**28464.** *IRIS STRAUSSI* Leichtl.(P. I. G. No. 6515.) *Distribution*.—The vicinity of Sultanabad, in the province of Irak Ajemi, western Persia.**28465.** *IRIS SUAVEOLENS* × *LUTESCENS* STATELLAE.

(P. I. G. No. 6220.)

28466. *IRIS TECTORUM* Maxim.(P. I. G. No. 6522.) *Distribution*.—The provinces of Shantung, Hupeh, Ichang, Hunan, Shensi, Kansu, and Szechwan, in China, and in the vicinity of Yokohama, in Japan.**28467.** *IRIS TECTORUM* × *MILESII*.

(P. I. G. No. 6221.)

28468. *IRIS TENAX* Dougl.(P. I. G. No. 6514.) *Distribution*.—Northwestern America, where it is common in open places from British Columbia southward to Oregon.**28469.** *IRIS TENAX* × *VERSICOLOR*.

(P. I. G. No. 6452.)

28470. *IRIS VERNA* L.(P. I. G. No. 6468.) *Distribution*.—Wooded hillsides from Pennsylvania to Kentucky and southward to Georgia and Alabama.**28471.** *IRIS VERSICOLOR* L.(P. I. G. No. 6445.) *Distribution*.—In swamps from Newfoundland to Manitoba and southward to Florida and Arkansas.**28472.** *JUGLANS CORDIFORMIS* Maxim.(P. I. G. No. 6449.) *Distribution*.—In the vicinity of Yokohama and of Hakodate on the island of Hokushu (Yezo), Japan.**28473.** *JUGLANS CORDIFORMIS* × *REGIA*.

(P. I. G. No. 6511.)

28474. *JUGLANS SIEBOLDIANA* Maxim.(P. I. G. No. 6448.) *Distribution*.—In forests on the mountains in Kiushu and in the vicinity of Tokyo, Yokohama, Kamakura, Yokosuka, and Hakodate, in Japan.**28475.** *LACHENALIA PENDULA* Ait.(P. I. G. No. 6192.) *Distribution*.—Along the coast of Cape Colony in the vicinity of Hout Bay and Cape Flats.**28476 to 28478.** *LACHENALIA PENDULA* × *TRICOLOR*.**28476.** (P. I. G. No. 6191.) *Cowslip*.**28477.** (P. I. G. No. 6193.) *Delight*.**28478.** (P. I. G. No. 6194.) *Rector of Cawston*.**28479.** *LACHENALIA TRICOLOR* Jacq.(P. I. G. No. 6195.) *Distribution*.—Along the coast of Cape Colony at Malmesbury, near Cape Town, Saldanha Bay, Cape Flats, and Port Elizabeth, South Africa.

28371 to 28531—Continued.

28480. LATHYRUS LATIFOLIUS L.

(P. I. G. No. 6491.) *Leichtlin Extra White*.

28481. LILIUM HENRYI $\times$ SPECIOSUM.

(P. I. G. No. 6553.)

28482. LILIUM HENRYI $\times$ SUPERBUM.

(P. I. G. No. 6498.) "The largest flowered Hemerocallis."

28483. LILIUM MACULATUM $\times$ MARTAGON.

(P. I. G. No. 6552.)

28484. LILIUM PHILIPPINENSE $\times$ LONGIFLORUM.

(P. I. G. No. 6562.)

28485. LILIUM PUBERULUM $\times$ LINIFOLIUM.

(P. I. G. No. 6297.) "Very characteristic hybrids bearing large scarlet blooms of great substance, the small centers being yellow, dotted brownish purple. The other cross-pollinated lilies, as far as bloomed, do not show evidence of hybridity."

28486. LILIUM SPECIOSUM Thunb.

(P. I. G. No. 6381.) Variety *magnificum*.

28487. LILIUM SPECIOSUM $\times$ HENRYI.

(P. I. G. No. 6551.)

28488. LILIUM sp.

(P. I. G. No. 6382.) *Ellen Wilmot*.

28489. MALUS BACCATA $\times$ SYLVESTRIS.

(P. I. G. No. 6547.) "MALUS BACCATA $\times$ 'Baldwin' $\times$ 'Yellow Transparent.' Second-generation hybrids of considerable vigor."

28490. NARCISSUS INCOMPARABILIS $\times$ POETICUS.

(P. I. G. No. 6209.)

28491. PAEONIA SUFFRUTICOSA Andr.

(P. I. G. No. 6453.)

28492. PAEONIA sp.

(P. I. G. No. 6454.) Seedling varieties.

28493. PHILADELPHUS CORONARIUS $\times$ MICROPHYLLUS.

(P. I. G. No. 6495.)

28494. PHILADELPHUS CORONARIUS L.

(P. I. G. No. 6492.)

28495. PLATYCODON GRANDIFLORUM (Jacq.) DC.

(P. I. G. No. 6432.) Variety *Mariesi macranthum*.

28496. PRUNUS SIMONII $\times$ AMERICANA.

(P. I. G. No. 6548.)

28497. PYRUS CHINENSIS $\times$ COMMUNIS.

(P. I. G. No. 6510.) Chinese varieties, *Kieffer*, *Le Conte*, and *Golden Russet*, pollinated with *Bartlett*, *Angouleme*, *Anjou*, *Seckel*, and *Lawrence*.

28498. QUAMASIA LEICHTLINII $\times$ CUSICKII.

(P. I. G. No. 6223.)

28371 to 28531—Continued.

28499 to 28503. Promising hybrids between native gooseberry species and European garden varieties.

28499. *RIBES CYNOSBATI* × *RECLINATUM*.

(P. I. G. No. 6565.)

28500. *RIBES MISSOURIENSE* × *RECLINATUM*.

(P. I. G. No. 6217.)

28501. *RIBES MISSOURIENSE* × *RECLINATUM*.

(P. I. G. No. 6563.)

28502. *RIBES MISSOURIENSE* × *RECLINATUM* × *ROTUNDIFOLIUM*.

(P. I. G. No. 6218.)

28503. *RIBES RECLINATUM* × *ROTUNDIFOLIUM*

(P. I. G. No. 6564.)

28504. *ROSA CHINENSIS* Jacq.

(P. I. G. No. 6443.) *Distribution*.—The provinces of Hupeh and Kwangtung, in China, and the island of Formosa.

28505. *ROSA LAEVIGATA* × *Frau Karl Druschki*.

(P. I. G. No. 6422.) “Attractive hardy hybrids bearing large semidouble sweet-scented blooms, bluish white in color.”

28506. *ROSA FERRUGINEA* × *Paul Neyron*.

(P. I. G. No. 6456.) “Nearly thornless variety with reddish foliage; bloom very double, medium in size, bright rose pink in color.”

28507. *ROSA LUTEA* × *Harrison's Yellow*.

(P. I. G. No. 6543.) “Very striking; buds nasturtium scarlet; blooms when opening light orange, turning to white and then to bluish pink; semidouble, 2 inches across.”

28508. *ROSA MULTIFLORA* × *LUTEA*.

(P. I. G. No. 6455.)

28509. *ROSA RUGOSA* × *CHINENSIS*.

(P. I. G. No. 6539.) *Victor Hugo*. “Profuse, large, double, sweet-scented blooms, fiery scarlet-crimson in color. Apparently the best *Rosa rugosa* hybrid.”

28510. *ROSA RUGOSA* (ALBA) × *CHINENSIS* (*Devoniensis*).

(P. I. G. No. 6540.) “Good double white *Rugosa*, resembling Mad. Georges Bruant.”

28511. *ROSA RUGOSA* × *Ards Rover*.

(P. I. G. No. 6497.)

28512. *ROSA RUGOSA* × ?.

(P. I. G. No. 6305.)

28513. *ROSA RUGOSA* × ?.

(P. I. G. No. 6541.) *Souvenir de Pierre Lepredieux*.

28514. *ROSA SOULIEANA* Crepin.

(P. I. G. No. 6569.) *Distribution*.—In the vicinity of Tatsienlu, in the province of Szechwan, western China.

28515. *ROSA* sp.

(P. I. G. No. 6544.) “Hybrids of *Crimson Rambler*.”

28371 to 28531—Continued.

29516. *Rosa* sp.(P. I. G. No. 6545.) *Lyon*.28517. *Rosa* sp.(P. I. G. No. 6417.) "*Lyon* $\times$ *President Carnot*."28518. *Rosa* sp.(P. I. G. No. 6542.) *Richmond*.28519. *Rosa* sp.(P. I. G. No. 6496.) *Victor Hugo*. (Hybrid *Remontant*.)28520. *Rosa* spp. Miscellaneous fruits.

(P. I. G. No. 6304.)

28521. *Rosa* spp. Seeds of hardy roses.

(P. I. G. No. 6428.)

28522. *Rosa* spp. Miscellaneous fruits.

(P. I. G. No. 6444.)

28523 and 28524. "Promising crossbred garden raspberries."

28523. *RUBUS NEGLECTUS* $\times$ *IDAEUS*.

(P. I. G. No. 6571.)

28524. *RUBUS NEGLECTUS* $\times$ *STRIGOSUS*.

(P. I. G. No. 6572.)

28525. *TRITOMA NORTHIAE* (Baker) Skeels.(*Kniphofia northiae* Baker, Jour. Bot., vol. 27, p. 43, 1889.)

(P. I. G. No. 6509.)

28526. *TRITOMA TUCKII* (Baker) Skeels.(*Kniphofia tuckii* Baker, Gard. Chron., ser. 3, vol. 13, p. 68, 1893.)

The generic name *Kniphofia* was applied by Moench in 1794 (Meth., p. 632) to *Aletris uvaria* L., a species belonging to the same genus as the two given above, but *Kniphofia* had been published by Scopoli in 1777 (Introd., p. 327) as a generic name for *Terminalia catappa* L., and was therefore invalid as a designation for the other and later genus.

The next earliest name available for this genus is *Tritoma*, which was published by Ker-Gawler in 1804 (Botanical Magazine, vol. 20, pl. 744), based on *Tritoma sarmentosa* (Andrews) Skeels (*Aletris sarmentosa* Andrews), a South African species belonging to the same genus as the two listed above. These species are therefore recognized under the name given to the genus by Ker-Gawler, a name perhaps more frequently applied to them in horticultural literature than *Kniphofia*.

These plants are both indigenous to Cape Colony, *Tritoma northiae* occurring near Grahamstown, in the Albany division of the coast region, and *Tritoma tuckii* in the Colesberg division of the central region.

28527. $\times$ *TRITONIA* "*Prometheus*."

(P. I. G. No. 6427.)

28528. *VITIS VINIFERA* $\times$ (*AESTIVALIS* $\times$ *LABRUSCA*).(P. I. G. No. 6418.) *Black Hamburg* $\times$ *Gold Coin*.

28371 to 28531—Continued.**28529. YUCCA FILAMENTOSA L.**(P. I. G. No. 6419.) Variety *variegata*.*Distribution*.—In dry and sandy soil from North Carolina to Florida and Mississippi.**28530. YUCCA FLACCIDA Haw.**(P. I. G. No. 6306.) *Distribution*.—On dry or sandy slopes in or near the mountains from North Carolina to Alabama.**28531. ZEPHYRANTHES SULPHUREA Hort.**

(P. I. G. No. 6216.)

28532. MEDICAGO CARSTIENSIS Wulfen.

From Edinburgh, Scotland. Presented by Dr. Isaac Bayley Balfour, director, Royal Botanic Garden. Received July 21, 1910.

See No. 27794 for previous introduction.

28533 to 28536. CARICA PAPAYA L.**Papaya.**

From Empire, Canal Zone, Panama. Presented by Mr. W. G. Ross, at the request of Mr. H. F. Schultz. Received July 21, 1910.

Seeds of the following:

28533. "Fruit cylindrical in shape, very rich flavor, heaviest one here weighing 16½ pounds." (Ross.)

"This variety has a very small seed cavity and less seeds than most others." (Schultz.)

28534. "Fruit oblong in shape, extra size, 10½ pounds, and having an excellent flavor." (Ross.)**28535.** "Fruit oblong and slightly tapering in shape, above medium in size, and having very sweet meat." (Ross.)**28536.** "Fruit pear shaped. Tree was planted three years ago and produced 30 papayas last year, all very large and of very fine flavor." (Ross.)**28537. TRICHOLAENA ROSEA Nees.**

From Benguela, Angola, Portuguese West Africa. Presented by Mr. T. W. Woodside, A. B. C. F. M. Received July 20, 1910.

"A grass that grows spontaneously in old worn-out fields. Grows often to the height of 2½ or 3 feet. It is very succulent and sweet, and cattle like it very much. From the fact that it grows in old abandoned fields I would judge that it does not require rich soil." (Woodside.)

28538 and 28539. MEDICAGO SATIVA L.**Alfalfa.**

From the Bombay Presidency, India. Presented by Mr. P. S. Kanetkar, superintendent, Empress Botanical Gardens, Poona, Bombay, India. Received July 23, 1910.

Seeds of the following:

28538. "From the Surat district, a few miles from the sea and at sea level.

It is grown in fields in which sugar cane was grown in the rains and harvested in October. The seed is sown in November. No cuttings for green fodder are taken, but the crop is allowed to run to flower and seed. The crop is harvested at the end of March. The cultivators near Surat have only recently taken

28538 to 28539—Continued.

to growing lucern for seed only. The crop from this seed, however, is not as lasting a one as from the seed of the following (S. P. I. No. 28539)."
(*Kanetkar.*)

28539. "From Poona, which is situated at a height of 1,900 feet and is distant 80 miles from the sea. The soil is loamy and responds to manure and irrigation treatments readily. The lucern crop in Poona is kept for three years, the cuttings which are taken every four to five weeks being fed to cattle and horses. The plants are allowed to run to seed in March every year. The seeds are sold at about triple the price of seed of the preceding (S. P. I. No. 28538). A quart bottleful is sold at from 2 to 2½ rupees, a rupee being equal to 16 pence." (*Kanetkar.*)

28540 to 28550.

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Transvaal Department of Agriculture. Received July 23, 1910.

Seeds of the following:

28540. *TRICHLORIS MENDOCINA* (Phil.) Kurtz.

See No. 26651 for previous introduction.

28541. *CERVICINA UNDULATA* (L. f.) Skeels.

See No. 27520 for previous introduction.

28542. *ERAGROSTIS LAPPULA DIVARICATA* Stapf.

Distribution.—On the Pellat Plains, between Matlareen River and Takun, in Bechuanaland, South Africa.

28543. *TRisetum SPICATUM* (L.) Richter.

Distribution.—Alpine regions and in the Arctic and Antarctic zones.

28544. *CHAETOCLOA NIGRIROSTRIS* (Nees) Skeels.

See No. 26653 for previous introduction.

28545. *ERAGROSTIS PLANA* Nees.

Distribution.—In the Kalahari district and along the eastern coast of Cape Colony and Natal in South Africa.

28546. *PANICUM MAXIMUM HIRSUTISSIMUM* Nees.

(*Panicum hirsutissimum* Steud.)

Distribution.—The coast region of Natal and Cape Colony.

28547. *SPINIFEX HIRSUTUS* Labill.

Distribution.—Sandy shores of New Zealand, Tasmania, and southern Australia.

28548. *TRICHLORIS MENDOCINA* (Phil.) Kurtz.

See No. 28540 for previous introduction.

28549. *ERAGROSTIS GUMMIFLUA* Nees.

Distribution.—South Africa; in the Kalahari region and along the eastern coast of Cape Colony and Natal.

28550. *ACACIA ROBUSTA* Burchell.

"This is a characteristic tree of the dry bush veldt below 4,500 feet altitude (i. e., in the subtropical zone of the Transvaal).

28540 to 28550—Continued.

"I have not been able to learn much about the wood, beyond the fact that it is sometimes used for fence posts when the rarer and harder sorts, such as *Olea verrucosa*, are not available." (Davy.)

Distribution.—In the vicinity of Litakun, Bechuanaland, and at Magaliesberg in the interior of Cape Colony.

28551. MANGIFERA INDICA L.**Mango.**

From Monrovia, Liberia, West Africa. Presented by Mr. E. L. Parker, Commissioner of Agriculture. Received July 20, 1910.

Sierra Leone.

28552 to 28555. MANGIFERA INDICA L.**Mango.**

From Poona, Bombay, India. Purchased from Mr. P. S. Kanetkar, superintendent, Empress Botanical Gardens. Received July 20, 1910.

Seeds of the following:

28552. *Alphonse.*

28554. *Pakria.*

28553. *Kadarapasant.*

28555. *Totafari.*

28556 to 28563. MANGIFERA INDICA L.**Mango.**

From Sibpur, Calcutta, India. Purchased from Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received July 20, 1910.

Seeds of the following:

28556. *Alphonso.*

28560. *Small Malda.*

28557. *Baromassia.*

28561. *Paranay.*

28558. *Bhadoorea.*

28562. *Peters.*

28559. *Large Malda.*

28563. *Soondershaw.*

28564 to 28568. MANGIFERA INDICA L.**Mango.**

From Colombo, Ceylon. Purchased from Dr. C. Drieberg, secretary, Ceylon Agricultural Society. Received July 22, 1910.

Seeds of the following; descriptive notes by Dr. Drieberg:

28564. *Dampara.* "Prolific; fruit small in size, of second quality, rather fibrous; skin yellow brown; seed small; ripens early and keeps fairly well. The tree is a free grower and is hardy. It is not much cultivated."

28565. *Heart.* "This is also called *Bombay* and is the commonest variety found on the market. Prolific; fruit medium in size, not much longer than broad, of second quality; skin golden yellow; seed of medium size; ripens early and is a fair keeper. The tree is a free grower and is hardy."

28566. *Jaffna.* "The favorite variety here. Prolific; fruit medium in size, twice as long as broad, of first quality; skin green; seed of medium size; ripens early and is a fair keeper. The tree is a fairly free grower and is hardy."

28567. *Parrot.* "Fairly prolific; fruit medium to small, of second quality; skin dark green; seed of medium size; ripens late and is a fair keeper. The tree is a free grower and is hardy. This variety has a slight turpentine flavor and is not very common."

28564 to 28568—Continued.

28568. *Rupee*. "This is also called '*Two-Shilling*.' It is a sparse bearer; fruit the largest of local (Ceylon) varieties, of first quality; skin pale green; seed small compared to size of fruit; ripens late and is not a good keeper. The tree is not a free grower and is tender. This variety is scarce and expensive. Requires very careful ripening."

28569 to 28582. MUSA spp.**Banana.**

From Paramaribo, Surinam. Presented by Mr. Goldsmith H. Williams, manager, United Fruit Co. Received July 21, 1910.

Suckers of the following; notes by Mr. Williams:

28569 to 28580. MUSA sp.

28569. "*Bas Joe*. From southern China. Has seeds in very small fruit."

28570. "*Cinerea Sahramphur*. Short, slim-pointed fruit of good flavor."

28571. "*Congo*."

28572. "Dwarf banana, frequently called *Cavendishii*."

28573. "Jamaica banana."

28574. "Large *Horse* banana. Sweeter than the plantain. Very good fried or roasted."

28575. "*Pisang Ambon*. A trifle better than the *Horse* banana of Florida and much the same shape."

28576. "*Pisang Celat*. Small, sweet fruit with 13 to 16 hands on a bunch."

28577. "*Pisang Kudjo*. Red banana."

28578. "*Pisang Siam*. Much like the *Horse* banana of Florida."

28579. "*Pisang Susa*. Similar to the ordinary *Apple* banana."

28580. "*Rubra India Sapientum Dacca*. One of the silver-skin varieties. What we term silver skin is a fruit that is like the red banana in shape and flavor, but with a clear, yellow skin."

28581. MUSA ROSACEA Jacq.

"Variety *Chittagong*. Very small, with seeds. New York Botanical Garden No. 9636."

Distribution.—The lower slopes of the eastern Himalayas in Chittagong, upper Burma, and in the Konkan region on the western coast of India; said to have been introduced from Mauritius in 1805.

28582. MUSA ZEBRINA Van Houtte.

"Reddish leaves. Very small worthless fruit, with seeds. Good as an ornamental plant."

28583. ARRACACIA XANTHORRHIZA Bancroft.**Arracacha.**

From Caracas, Venezuela. Presented by Señor Antonio Valero Lara. Received July 26, 1910.

See No. 3511 for description.

28584. DIOSPYROS PEREGRINA (Gaertn.) Guerke.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received July 26, 1910.

"A dense, evergreen, small tree with dark-green foliage and long, shining leaves; common throughout India and Burma except the arid and dry zone in the Punjab and Sind. Distributed to Ceylon, Siam, and the Malay Peninsula; very abundant in Bengal. It is a beautiful tree; the fruit is eatable, but excessively sour. Its principal use is for paying the bottoms of boats. It is beaten in a large mortar and the juice is expressed. This is boiled, mixed with powdered charcoal, and applied once a year to the outside of the planks. The wood is of little value. The fruit is largely used in tanning, being a powerful astringent. The juice of the unripe fruit is used in medicine as an astringent. The tree produces a round fruit as big as a middle-sized apple, green when unripe, rusty yellow when ripe, and in the later stages containing a somewhat astringent pulp, in which the seeds are embedded. When ripe it is eaten by the natives, but is not very palatable. The leaves are also eaten as a vegetable. Ainslie mentions that the carpenters of the Malabar coast use the juice of the fruit as an excellent glue." (*Watt, Dictionary of the Economic Products of India, vol. 3, p. 145.*)

Seeds.

28585 to 28593.

From Domäne Niemiercze, Podolia, Russia. Presented by Messrs. K. Buszczynski and M. Lazynski. Received July 22, 1910.

Seeds of the following:

28585 to 28587. AVENA SATIVA L.

Oat.

28585. *Earliest, or Sixty-Day.*

28586. *Ligovo.*

28587. The new oats (cross between *Ligovo* and *Earliest*).

28588 to 28592. TRITICUM AESTIVUM L.

Wheat.

28588. Brown bearded.

28591. *Triumph of Podolia.*

28589. *Crossed Wheat No. 1.*

28592. White bearded.

28590. *Improved Banat.*

28593. TRITICUM DURUM Desf.

Wheat.

White spring.

28594 and 28595.

From Spain. Presented by Mr. R. L. Sprague, American consul, Gibraltar, Spain. Received July 7, 1910.

Seeds of the following; notes by Mr. Sprague:

28594. VICIA ERVILIA (L.) Willd.

Bitter vetch.

"*Yero.* This vetch is sown throughout Andalusia, but never plowed under for green manure. When the crop is ripe it is gathered and given to cattle during the winter months."

28595. LATHYRUS SATIVUS L.

"*Alverjones.* These are used for green manure and can be procured in larger quantities than the preceding (S. P. I. No. 28594). At about the same price the practical result is considered better."

28596. HORDEUM sp.**Barley.**

From Maison Carree, Algeria. Presented by Dr. L. Trabut, Algiers, Algeria.
Received July 27, 1910.

"Smooth-bearded black barley. This barley appeared as a mutation in some black barley from Australia; it is very early and very resistant to drought. Curious on account of its absolutely smooth beards." (*Trabut.*)

28597. ALEURITES MOLUCCANA (L.) Willd.**Candlenut.**

From Manila, Philippine Islands. Presented by Mr. William S. Lyon. Received July 21, 1910.

See No. 24351 for description.

28598 to 28603. ALLIUM CEPA L.**Onion.**

From Puerto de Orotava, Teneriffe, Canary Islands. Presented by Mr. Solomon Berliner, American consul, Teneriffe. Received July 27, 1910.

Seeds of the following:

28598 to 28600. From Wildpret Bros. (Specially selected seed.)

28598. *Bermuda Red.*

28600. *Crystal Wax.*

28599. *Bermuda White.*

28601 to 28603. From Mr. T. M. Reid.

28601. *Bermuda Red.*

28603. *Crystal Wax.*

28602. *Bermuda White.*

28604. CICER ARIETINUM L.**Chick-pea.**

From Byers, Colo. Procured by Mr. H. N. Vinall from Mr. Edelen. Received July 29, 1910.

"Mr. Edelen says the original seed of these peas was given to him by an Italian. He claims they yielded 2,500 pounds of grain per acre last season, and in the face of an extremely dry season this year he is counting on 1,000 pounds per acre. From the looks of his field I should judge that 500 or 600 pounds is nearer what the correct yield will be. Chick-peas are very drought resistant and hail does them little injury, as the plant itself is tough and fibrous." (*Vinall.*)

28606. CROTALARIA CANDICANS Wight and Arnott.

From Peradeniya, Ceylon. Presented by Dr. J. C. Willis, director, Botanic Garden. Received August 2, 1910.

See No. 28344 for description.

28607. DENDROCALAMUS STRICTUS (Roxb.) Nees.**Bamboo.**

From Sibpur, near Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received August 5, 1910.

See Nos. 21548, 22819, and 23476 for previous introductions.

28609. MYRICA NAGI Thunb.

From Kiayingchau, China. Presented by Mr. George Campbell. Received July 25, 1910.

Seeds. See Nos. 25908 and 26905 for previous introductions.

28610 and 28611. ANONA spp.

From Redland Bay, Queensland, Australia. Presented by Mr. James Collins.
Received August 2, 1910.

Cuttings of the following:

28610. ANONA sp.

"As far as I know this variety has never been named. It is a giant and far superior to any of the other anonas. It often attains a weight of 6 pounds, 'being a veritable custard.' It originated here about 30 years ago." (*Collins.*)

28611. ANONA CHERIMOLA Mill.

Cherimoya.

28612 and 28613. MANGIFERA INDICA L.

Mango.

From Poona, Bombay, India. Purchased from Mr. P. S. Kanetkar, superintendent, Empress Botanical Gardens. Received August 4, 1910.

Seeds of the following:

28612. *Pyrie.***28613. *Kala Hapoos.*****28614 and 28615. ZEA MAYS L.**

Corn.

From the Kalahari, about 30 miles east of Kuruman, on the Kaapscheberg, South Bechuanaland, Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria, Transvaal, South Africa. Received August 2, 1910.

Seeds of the following; notes by Prof. Davy:

"*White Botman* flint maize. This seed was procured from a very dry region, of shallow limestone soil, cold and dry in winter. It struck me that these strains might do for the extreme southwest of the corn belt of the United States (northwestern Texas)."

28614. "Donovan's strain (red cob) has been grown by him without selection or change of seed for 10 years, and came originally from a still drier region, Daniels Kuil, at the southeast end of the Kuruman Hills."

28615. "Mayer's strain, from the same vicinity as the preceding (S. P. I. No. 28614)."

28616. TRICHILIA DREGEANA E. Meyer.

From Durban, Natal, South Africa. Presented by Dr. J. Medley Wood, director, Botanic Gardens. Received July 26, 1910.

"A handsome evergreen shade tree." (*Wood.*)

Distribution.—In woods in the vicinity of Durban in South Africa.

See No. 9482 for previous introduction.

28617. VIGNA UNGUICULATA (L.) Walp.

Cowpea.

From Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received August 4, 1910.

"Probably identical with the *Blackeye* variety; I grew them on the campo and harvested them just two months after sowing. This cowpea could hardly be called a forage variety, at least not here in this soil, where it soon goes to seed, but bears heavily." (*Fischer.*)

28618 to 28625.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, July 25, 1910.

28618 to 28625—Continued.

Seeds of the following:

28618. LATHYRUS SATIVUS L.

From Vladikavkaz, Caucasus, Russia. "(No. 1334a, May 4, 1910.) A legume very rarely seen, said to come originally from Russia. The seeds are used locally as a human food, being boiled in soups or mixed with chick-peas in stews. Suitable for trial as a forage crop in regions with a moderately light summer rainfall." (Meyer.)

28619. PISUM SATIVUM L.

Field pea.

From Vladikavkaz, Caucasus, Russia. "(No. 1335a, May 4, 1910.) A very small pea, apparently an offspring from a cross between *Pisum sativum* and *Pisum arvense*. Used locally as a food, being more appreciated than the large-seeded varieties and consequently more expensive. Perhaps of value as a forage or food crop in the intermountain regions." (Meyer.)

28620. CICER ARIETINUM L.

Chick-pea.

From Baku, Caucasus, Russia. "(No. 1336a, May 23, 1910.) A large variety of chick-pea, obtained from a Persian seed dealer and said to come from Persia. Chick-peas are much used by the orientals, preferably boiled with mutton in soups and stews." (Meyer.)

28621. VICIA FABA L.

Horse bean.

From Baku, Caucasus, Russia. "(No. 1337a, May 23, 1910.) A horse bean, said to come from Persia. Used by the orientals both in the fresh green and in the dried state as a vegetable. Ground horse beans are a well-known and excellent feed for draft animals; perhaps they may be grown advantageously as a winter crop in the mild-wintered regions of the United States and as a summer crop in the intermountain regions." (Meyer.)

28622. TRITICUM DURUM Desf.

Wheat.

From Baku, Caucasus, Russia. "(No. 1338a, May 23, 1910.) A good hard wheat, said to come from Persia." (Meyer.)

28623. TRITICUM DURUM Desf.

Wheat.

From Vladikavkaz, Caucasus, Russia. "(No. 1339a, May 4, 1910.) An excellent hard wheat, coming from Persia and called '*Tatuch*.'" (Meyer.)

28624. HORDEUM sp.

Hull-less barley.

From Baku, Caucasus, Russia. "(No. 1340a, May 23, 1910.) A naked barley of superior quality, said to come from Persia. Much imported into this country, where it is roasted and mixed with coffee. The beverage produced from this is very agreeable." (Meyer.)

28625. LENS ESCULENTA Moench.

Lentil.

From Baku, Caucasus, Russia. "(No. 1341a, May 23, 1910.) A large variety of lentil, said to come from Persia. Much used by the orientals in soups and stews. Recommended as a crop in semiarid regions." (Meyer.)

28626. OPUNTIA sp.

From Nice, France. Presented by Dr. A. Robertson-Proschowsky. Received at the Subtropical Plant Introduction Garden, Miami, Fla., in the spring of 1909. Numbered for convenience in recording distribution on August 12, 1910. "This *Opuntia* is easily propagated by cuttings of the pads. After being severed from the plant, they should be left in the sun for two or three days to dry up the

28626—Continued.

wound and then be planted rather deeply in the ground in comparatively dry soil. Because of the value of its fruits it seems that this species is likely to prove a very valuable one for dry soils where other plants are not likely to thrive." (*Robertson-Proschowsky, Journal d'Agriculture Tropicale.*)

28627 to 28631. MANGIFERA INDICA L.**Mango.**

From India. Purchased from Mr. P. S. Kanetkar, superintendent, Empress Botanical Gardens, Poona, Bombay. Received August 8, 1910.

Seeds of the following:

28627. *Amin.* From Madras Presidency.

28628. *Borsha.* From Poona.

28629. *Fernandez.* From Goa.

28630. *Peterasant.* From Madras Presidency.

28631. *Shendrya.* From (Kothrud) Poona.

28632 and 28633. CAPSICUM ANNUUM L.**Pepper.**

From Sibpur, near Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received August 2, 1910.

Seed of *Nepal* peppers from northern India, as follows:

28632. Red.

28633. Yellow.

28634 to 28636.

From Chile. Received through Mr. José D. Husbands, Limavida, Chile, August 3, 1910.

Seeds of the following; descriptive notes by Mr. Husbands:

28634. *CHENOPODIUM QUINOA* Willd.

Quinoa.

"(No. 585.) A grain said to produce 1,000 for 1. After rubbing and washing well to remove its bitterness it is eaten boiled, toasted, and ground into flour, used in soups, etc. The ashes of the plant contain an extra amount of potash and are used in soap making."

28635. *MYRTUS* sp.

"(No. 590.) A new class of '*Arrayan*,' a *Myrtus* that flowers in the fall, has crimson seed berries, and seeks the altitude of the driest arid hills; the fragrance is about the same as of that which flowers in the spring and only grows in wet or moist places. A dense, evergreen, ornamental treelet or bush worthy of cultivation."

28636. *PERSEA MEYENIANA* Nees.

"(No. 584.) '*Lingue*' of central Chile."

28637 to 28642. VITIS VINIFERA L.**Grape.**

From Elqui, Chile. Received through Mr. José D. Husbands, Limavida, Chile, August 11, 1910.

28637 and 28638. "*Italia.* This is the finest raisin grape known." (*Husbands.*)

28637 to 28642—Continued.**28637 and 28638—Continued.****28637. Seeds.****28638. Cuttings.**

"While I can not speak authoritatively upon the subject, I will give my opinion, which I believe will be found substantially correct upon investigation. Elqui raisins are made from the 'Italia' grapes. These are lemon yellow in color, long-oblong in shape, agreeably sweet, exquisitely flavored, have thin skins and semitransparent, long, slender bunches, a fruit which makes excellent raisins even when left hanging on the vine after maturity. The seeds vary. Some fruits are seedless; others in the same bunch have chaff seeds; others one, two, three, and rarely, but sometimes, more. I think neither machines nor shade are employed in drying raisins in Chile, nor are they steeped in boiling water or any sort of lye, nor are they dried on the plant. They are simply picked and sun-dried upon mats, trays, or shallow baskets. Their flexibility is natural and not due to sweating. The natural dryness of the climate is quite sufficient to dry them to perfection either in the shade or sun. The latter method is quicker and better, as it leaves the raisins softer. These vines are prolific bearers and the grapes are highly esteemed as extra fine and juicy table grapes.

"In view of the fact that all fruits, grains, etc., of a similar appearance are vulgarly called the same, I have an idea that the Elqui Italia is, or may be, a class by itself, a Chile strain of the Italias introduced from Italy. I have seen very many kinds of Italia grapes grown in central Chile, principally for consumption while fresh. There are other classes preferred for wines and brandy. All these have the same general appearance and are called alike, but show marked differences in plant and fruit. The Elqui grape for making raisins, however, is above competition." (*Husbands.*)

28639 and 28640. "*Pastilla.* It is from these grapes that the famous Chile brandy called 'Pisco' is distilled." (*Husbands.*)

28639. Seeds.**28640. Cuttings.**

"Pisco originated at a seaport just south of Callao, Peru, named Pisco. The liquor was sold in a jar about 30 inches high, mouth about 6 inches in diameter made so that it could not stand up. This jar was made by the Spanish upon models of the Incas. The brandy was placed within this piece of pottery new and unrefined; often buried as a refining process. I believe the plants came originally from Peru." (*Husbands.*)

28641 and 28642. "*Negra* (black). It is from these grapes that the celebrated Elqui red wine is made."

28641. Seeds.**28642. Cuttings.****28643 and 28644.**

From the Andean Highlands near Cuzco, Peru. Presented by Mrs. Franklin Adams, Washington, D. C. Received August 10, 1910.

Seeds of the following:

28643. ZEA MAYS L.

Corn.

28644. CHENOPodium QUINOA Willd.

Quinoa.

See No. 28634 for previous introduction.

28645. VICIA FABA L.**Horse bean.**

From Paris, France. Purchased from Vilmorin, Andrieux & Co. Received August 12, 1910.

Winter.

28646. MEDICAGO SATIVA TUNETANA Murbeck.

From Oued Zenati, Algeria. Presented by Mr. A. Clavé. Received August 13 1910.

"The plants from which this seed was taken were found in a single, very limited place on calcareous and uncultivated ground. I had to watch carefully to save from the sheep, which are very fond of this excellent forage, a few flowering stems and a few seeds. It was impossible for me to get a larger quantity because of the great scarcity of this species in this region." (*Clavé.*)

Distribution.—Pine woods on both sandy and calcareous soil in the mountainous region of central Tunis and at Oued Zenati and Tebessa in the province of Constantine in Algeria.

28648 and 28649.

From Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, August 13, 1910.

28648. TULIPA sp.**Tulip.**

From mountains near Bachar-den, Turkestan. "(No. 790, June 5, 1910.) A tulip growing on sunburned mountain sides in decomposed rock soil. Flowers apparently red." (*Meyer.*)

28649. EREMURUS sp.

From near Kulikalan, in the province of Samarkand, Turkestan. "(No. 789.) A very robust, ornamental Eremurus, having spikes of flowers that grow 4 feet tall and are rosy pink in color. Found at an altitude of about 7,000 feet in rich, blackish soil. Of value as an ornamental plant in fairly dry climes; apparently able to stand low temperatures." (*Meyer.*)

28653. ERAGROSTIS LEHMANNIANA Nees. (?)

From Mowbray, Cape Colony, South Africa. Presented by C. Starke & Co. (Ltd.). Received August 13, 1910.

Distribution.—Central and eastern South Africa, extending from the Graaff Reynet region and Natal southward to the Cape.

Seeds.

28655. TRITICUM TURGIDUM L.**Wheat.**

From Valencia, Spain. Presented by Mr. Robert Frazier, jr., American consul. Received July 12, 1910.

"Irrigated wheat, the typical variety grown in this vicinity. Usually planted from the end of November to the middle of December." (*Frazier.*)

28656 and 28657. SOLANUM spp.

From Peru. Presented by Dr. A. Weberbauer, German Legation, Lima. Received August 16, 1910.

Tubers of the following; notes by Dr. Weberbauer:

28656 and 28657—Continued.**28656. SOLANUM sp.**

"Tubers of an undoubtedly wild *Solanum* that I collected myself. I found the plants on the hills near Lima, between crumbled rocks in the so-called Loma formation, 200 meters above sea level. The specimens were very young, in the beginning of their growing period, but one of them already had blooms. These were deep violet, almost the color of *Viola odorata*. The plants were very similar to the potato, but were not *Solanum tuberosum*, but the *Solanum maglia* which I collected (formerly) near Mollendo.

"Lima, considering its latitude, has very low temperatures; from June to October the average monthly temperature is 15.9° to 16.7° C.; sometimes the temperature sinks to 12° C. From November to May there is practically no precipitation. From June to October, however, it is cloudy almost continuously, and slight rains dampen the ground so that the previously bare hills are covered with a green carpet of plants (chiefly annual plants, such as tuberous and bulbous plants). This vegetation is called Loma."

28657. SOLANUM sp.

"Tubers of another *Solanum* species related to the potato. This, too, was found at 200 meters above sea level and between crumbled rocks in the Loma. The plant has pale-lilac blooms and is distinguished from *Solanum tuberosum*, among other things, by the narrow leaf lobes." (*Weberbauer.*)

28658. RUBUS sp.**Raspberry.**

From the top of Mount Omei, Szechwan Province, China. Presented by Dr.

Edgar T. Shields, Yachow, Szechwan Province, China. Received July 23, 1910.

"Seed of a most delicious, large, yellow raspberry." (*Shields.*)

28659. VICIA FABA L.**Horse bean.**

From Yachow, Szechwan Province, China. Presented by Dr. Edgar T. Shields.

Received July 23, 1910.

"These are very prolific and are used extensively in feeding horses and cows. They are also eaten by the poorer people, boiled and roasted in oil." (*Shields.*)

28660. MAGNOLIA CAMPBELLII Hook. f. and Thoms.

From Erfurt, Germany. Purchased from Haage & Schmidt. Received August 17, 1910.

A large deciduous-leaved tree, whose rosy flowers, often 10 inches in diameter, open before the leaves appear. The leaves are 12 inches long by 4 inches wide, smooth above and silky pubescent below.

Distribution.—In the forests on the slopes of the Himalayas, at an elevation of 8,000 to 10,000 feet, in Sikkim and Bhutan, northern India.

28661. ZEA MAYS L.**Corn.**

From Zomba, Nyasaland Protectorate, Africa. Presented by Mr. E. W. Davy, agriculturist, Agricultural and Forestry Department. Received August 13, 1910.

"Seed of a native-grown type of Nyasaland. I have carried out selection work on it for only one year at present, and it will take some years to get a very true and improved type fixed. The results of even the first year show a marked improvement, the yield being at the rate of 4,550 pounds of dried husked corn per acre. I would recommend you to test it in your Southern States with a good rainfall." (*Davy.*)

28662 and 28663.

From South Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria. Received August 1, 1910.

Seeds of the following:

28662. ACACIA LITAKUNENSIS Burchell.

"This was collected 70 miles southeast of the type locality. I have not been able to learn that the wood has any special economic value, but the tree is ornamental and stands considerable drought, with some frost." (Davy.)

Distribution.—The vicinity of Litakun in Bechuanaland, South Africa.

28663. LEBECKIA CUSPIDOSA (Burch.) Skeels.

(*Spartium cuspidosum* Burchell, Travels, vol. 1, p. 348, 1822.)

(*Genista cuspidosa* DC., Prodrumus, vol. 2, p. 147, 1825.)

(*Stiza psiloloba* E. Meyer, Commentariorum de Plantis Africae Australioris, p. 32, 1835.)

(*Lebeckia psiloloba* Walp., Linnæa, vol. 13, p. 478, 1839.)

This South African leguminous shrub is reported by Harvey (Flora Capensis, vol. 2, p. 84, 1861-62) from "Near Uitenhage," and it was originally described from between "Gattikamma" (white water) and "Klaarwater," now known as Griquatown, and apparently near the latter locality. Burchell says in regard to it: "In one part, toward the end of our journey, we passed abundance of a handsome shrub, from 5 to 7 feet in height, covered with showy yellow flowers, but quite destitute of leaves, and even by this light easily to be distinguished as a plant which had not been anywhere seen before. It was completely armed at all points, its green leafless branches being terminated by a spine as sharp as a needle."

De Candolle in the Prodrumus restricted the use of the generic name *Spartium* to a single species of the Mediterranean region, *S. junceum*, and referred this South African plant to *Genista*. The species was apparently again described by E. Meyer under the name *Stiza psiloloba*, and since *Stiza* is not recognized as distinct from the earlier *Lebeckia*, Meyer's plant was placed in that genus by Walpers. The original specific name published by Burchell, though long in disuse, is here restored.

"This is a nearly leafless, dense shrub, about 6 feet high, bearing ornamental yellow flowers. It is very spiny and should be suitable for hedges. It comes from the Kalahari, near Kuruman, and is likely to suit dry, warm regions." (Davy.)

28665. SOLANUM TUBEROSUM L.

Potato.

From Temuco, Chile. Presented by Mr. D. S. Bullock. Received August 19, 1910.

"*Damma*. An early variety." (Bullock.)

Tubers.

28667 to 28672.

From Mauritius. Presented by Mr. Gabriel Regnard. Received July 29, 1910.

Seeds of the following:

28667. APHLOIA THEAEFORMIS (Vahl) Bennett.

"*Bois Goyave* or *Bois Viliau*. A glabrous, much-branched shrub; leaves oblong, obtuse, or acute, entire or toothed, 1 to 4 inches long. Flowers yellowish. Fruit ovoid-ampullæform $\frac{1}{4}$ to $\frac{1}{3}$ inch long; 10 to 12 seeded." (Regnard.)

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28667 to 28672—Continued.

Distribution.—Frequent in the woods on the islands of Mauritius, the Seychelles, Rodriguez, and Madagascar.

28668. *ELAEOCARPUS* sp.

28669. *EHRETIA ACUMINATA* R. Br.

"An Indian tree of the boraginaceous family yielding a tough, light, and durable wood. It bears bunches of tiny white flowers and red seeds the size of a small pea. Is a very showy and ornamental tree." (*Regnard.*)

Distribution.—Slopes of the subtropical Himalayas and the adjacent plains from Gurhwal to Bhutan in India, and in Java, Australia, and Japan.

28670. *MIMUSOPS IMBRICARIA* Willd.

"A large tree with gray, glabrous branches. Leaves oblong, glabrous, shining. Fruit a drupe, globose, the size of a small apple, one to four seeded." (*Regnard.*)

Distribution.—Thick woods in the interior of the islands of Mauritius and Reunion.

28671. *TAMBOURISSA AMPLIFOLIA* (Tul.) DC.

"Branchlets stout. Leaves alternate, oblong, $\frac{1}{2}$ to 1 foot long. Bud of female perianth black, apiculate, $1\frac{1}{2}$ inches thick, globose, with conical fruits $\frac{1}{2}$ inch long." (*Regnard.*)

Distribution.—In the forests on the slopes of the Pouce and other mountain ranges on the island of Mauritius.

28672. (Undetermined.)

"A forest shrub (?)." (*Regnard.*)

28673 to 28675.

Plants of the following, turned over to the Department for distribution by Dr. J. N. Rose, associate curator, Division of Plants, United States National Museum, Washington, D. C., August, 1910.

28673. *ECHEVERIA HOVEYI* ROSE *n. sp.*

"Usually stemless, but when old developing a short stem; leaves forming a loose spreading rosette, pale green with broad pinkish or white margins and these more or less wavy or sometimes colored throughout; flowering stem a second raceme bearing 6 to 12 flowers; corolla pinkish.

"The origin of this form is unknown. It is probably some horticultural sport or hybrid, but does not closely resemble any of our common cultivated forms, although it may be said to belong to the group of species in which *Echeveria secunda* and *Echeveria glauca* are found." (*Rose.*)

28674. *PARMENTIERA CEREIFERA* Seem.

Candle tree.

"This is one of the most remarkable trees of the Tropics, a native of Panama. It grows 30 to 40 feet high and produces from its stem and old branches a profusion of almost sessile campanulate flowers; these are followed by yellowish cylindrical, smooth points, 12 to 18 inches long, which appear exactly like wax candles, as the botanical name implies. So close is the resemblance that travelers, seeing the tree in fruit for the first time, are liable to be temporarily puzzled as to whether the candles of shops are made in factories or grow on trees. The candlelike fruits are suspended from the bare stem and branches by short slender stalks; dangling in the air, they readily give the impression of a chandler's shop. This impression is intensified as night falls and the numerous fireflies move among the fruits. It is not, perhaps, surprising that the inex-

28673 to 28675—Continued.

perienced traveler should not infrequently be informed that the fireflies perform the duty of lighting up these 'candles' when required by the denizens of the jungle. The fruits are fleshy and juicy and have a peculiar applelike odor. They are eaten by certain tribes, and also by cattle. The tree belongs to the natural order Bignoniaceæ." (*Rose.*)

28675. ZINZIBER sp.

Wild ginger.

"From near Tampico, Mexico. Sent in by Dr. Edward Palmer." (*Rose.*)

28676 and 28677. MANGIFERA INDICA L.

Mango.

From San Jose, Costa Rica. Presented by Mr. A. R. Guell, Louisiana State University, Baton Rouge, La. Received August 22, 1910.

Cuttings of the following:

28676. "Our common fiberless variety." (*Guell.*)

28679 to 28683.

From Richmond, New South Wales, Australia. Presented by Mr. H. W. Potts, principal, Hawkesbury Agricultural College. Received August 2, 1910.

Seeds of the following:

28679. ANDROPOGON PERTUSUS (L.) Willd.

Distribution.—Southern Europe and Asia, extending from Sicily to India, in tropical Africa, and in Queensland and New South Wales in Australia.

28680. ANDROPOGON REFRACTUS R. Brown.

Distribution.—Eastern Australia, at Port Essington in North Australia, along the Brisbane River in Queensland, at Port Jackson in New South Wales, and at Mitta-Mitta in Victoria.

28681. DICHELACHNE CRINITA (L. f.) Hook. f.

Distribution.—Throughout Australia and in Tasmania and New Zealand.

28682. EUCALYPTUS ROBUSTA Smith.

Swamp mahogany.

Distribution.—New South Wales in Australia, extending from Port Jackson to the Blue Mountains.

28683. STERCULIA DIVERSIFOLIA G. Don.

Kurrajong tree.

Distribution.—Australia, in the provinces of Queensland, New South Wales, Victoria, and Western Australia.

28684. DIOSPYROS MONTANA CORDIFOLIA (Roxb.) Hiern.

From Lahore, Punjab, India. Presented by Mr. W. R. Mustoe, superintendent of the Government Gardens. Received August 23, 1910.

A tree with short spines occasionally on the trunk and older branches; young branches and leaves softly pubescent; leaves narrowly ovate, slightly heart shaped at the base; fruit globular and about the size of a large cherry. The wood is yellowish gray and soft, but durable. It is used for making carts and tools and would be suitable for furniture.

Distribution.—India, from the Himalayas to Ceylon and Tenasserim, through the Malay Archipelago to tropical Australia.

28685. PRUNUS MUME Sieb. and Zucc. Japanese apricot.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received August 24, 1910.

See Nos. 9211 to 9216 for description.

28686 and 28687.

From Washington, D. C. Presented by Mr. W. R. Smith, superintendent, National Botanic Garden. Numbered for convenience in recording distribution August 25, 1910.

Plants of the following:

28686. ACTINIDIA KOLOMIKTA (Maxim.) Rupr.

See Nos. 20360 and 22593 for description.

28687. PASSIFLORA CAPSULARIS L.

"A climbing vine with leaves dividing below the middle into two oblong lanceolate lobes; flowers greenish white, the filament crown pale yellowish green surrounding a double white cup, anthers and stigmas yellow. Fruit about 2 inches long, oblong, and six-angled." (*Adapted from Botanical Magazine, vol. 55, pl. 2868.*)

Distribution.—Mirador in southern Mexico and southward to Ecuador and Brazil.

28688 and 28689.

From Paraguay, South America. Presented by Mr. C. F. Mead, Piropo, Paraguay. Received August 20, 1910.

Seeds of the following:

28688. PSIDIUM GUAJAVA L.

Guava.

"In Spanish called '*Guayaba grande*' and in Guarany '*araza-guaza*.' It is the same class of fruit as the small guayaba, except that it is much larger, about the size of a hen's egg, and is borne on a tree which in five years attains a height of 20 to 25 feet and a diameter of 8 to 10 inches. The wood of this tree is hard, tough, and impossible to split." (*Mead.*)

28689. BROMELIA sp.

"Caraguata."

"This plant in Guarany is called '*caraguata*'. It grows in camp whereabouts especially in barren spots. Every year in the fall the center leaves turn bright red and it bears a cluster of pink and white flowers, similar to tube-roses. The fruits, which are used here for preserves only, are borne in a cluster 10 to 15 inches long and 4 to 6 inches in diameter; they are the size of a small plum and are bright yellow when ripe. The plant has a bad name, owing to the difficulty of exterminating it when it is well started."

(*Mead.*)

28690. WIDDRINGTONIA WHYTEI Rendle. Mlanje cypress.

From Zomba, Nyasaland Protectorate, Africa. Presented by Mr. J. M. Purves, chief forest officer. Received August 25, 1910.

"The seed germinates quickly, usually in three or four weeks, in moist and slightly shaded soil, with a mean temperature of from 65° to 70° F. The tree occurs in about 17° south latitude at elevations of from 5,000 to 6,000 feet. Above the latter it becomes very stunted in growth. It exhibits a preference for deep gullies and ravines, and seems to detest very strong winds. The soil varies considerably, and fine trees often occur in the crevices of the decomposing granite rocks, of which the mountain chiefly consists. The rainfall will vary from 70 to 90 inches, and in the dry months the

28690—Continued.

forests are subject to heavy mist and fog, with the result that the undergrowth never dies and is always very moist. The rains fall in the hot months, October to April, and herein will lie your chief difficulty in establishing the tree in the Northern Hemisphere. In the south of England it is grown with difficulty, as it makes its new growth in the same months as at Mlanje, with the result that it does not ripen off before the advent of frosts. At elevations of 3,000 feet in Nyasaland, where the conditions of climate are more xerophytic, it makes a nice ornamental tree, but it begins to die out suddenly after 10 or 12 years. It seems to thrive best in its native habitat when it is slightly intermixed with other leaf-shedding trees and evergreens, typical of mountain forests, as the decaying foliage, etc., helps to form a better layer of humus." (*E. W. Davy, acting chief forest officer, Agricultural and Forestry Department, Zomba, Nyasaland Protectorate, Africa.*)

28691 to 28703. MANGIFERA INDICA L.**Mango.**

From Seharunpur, India. Purchased from Mr. A. C. Hartless, superintendent, Government Botanic Gardens. Received August 23, 1910.

Seeds of the following:

28691. <i>Sanduria.</i>	28698. <i>Sharbati</i> (brown).
28692. <i>Singapuri.</i>	28699. <i>Bulbulchasm.</i>
28693. <i>Gopalbhog.</i>	28700. <i>Calcutta Amin.</i>
28694. <i>Ennurea.</i>	28701. <i>Hathijhul.</i>
28695. <i>Faizan.</i>	28702. <i>Chickna.</i>
28696. <i>Tamancha.</i>	28703. <i>Faquirmala.</i>
28697. <i>Sunahra.</i>	

28704. ROLLINIA sp.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received August 26, 1910.

"Tree 30 feet; leaves 7 inches long; fruit heart shaped, with prominent eyes of a yellowish color when ripe; edible." (*Regnard.*)

28705 to 28707. SOLANUM spp.**Wild potato.**

From Marseille, France. Presented by Prof. Edouard Heckel, director, Botanic Gardens. Received August 29, 1910.

Tubers of the following:

28705 and 28706. SOLANUM MAGLIA Schlecht.	
28705. White and violet.	28706. Fifth generation.
28707. SOLANUM COMMERSONII Dun.	
Half wild.	

28708 to 28710.**Willow.**

From Limavida, via Molina, Chile. Presented by Mr. José D. Husbands. Received August 30, 1910.

Cuttings of the following:

28708. SALIX VITELLINA L.

"(H. No. 609.) *Yellow Mimbre.* An industrial plant of value, introduced into Chile from Europe by the Spaniards. Grows in waste spots along the edge of canals, creeks, ravines, etc. It is used to make extra strong baskets for holding fruit, potatoes, or corn and for general farm and factory uses; also to tie the fences, thatches, etc." (*Husbands.*)

28708 to 28710—Continued.**28709. SALIX HUMBOLDTIANA Willd.**

"(H. No. 611.) *Sauce*. A Chilean willow that grows wild, principally in the sands of the river-bottom lands. Its greatest use is for live fence posts in wet or water-covered lands. Cuttings when planted take root quickly and grow very rapidly. Its form varies and it is not a uniform growth like 'castilla' or the weeping varieties. The bark is used in medicine as an astringent, febrifuge, etc., and is a valuable remedy; it also gives a white crystallized substance called 'salicina,' used in fevers as quinine." (*Husbands*.)

28710. SALIX HUMBOLDTIANA Willd.

"(H. No. 610.) Variety *fastigiata*. The Chilean castilla. These trees grow perfectly straight and attain a great height. All the branches grow up close to the trunk, like a well-trimmed *Populus*. I have seen these trees growing in the worst arid clays, perfectly dry." (*Husbands*.)

28711. GOSSYPIUM sp.**Cotton.**

From Manly, near Brisbane, Queensland, Australia. Presented by Mr. Daniel Jones. Received August 30, 1910.

"Seed of a hybrid, naturally crossed, found in a field; it is of good quality and a good bearer. So far we are not sure whether it will maintain its present standard, but we are experimenting with it. This sample is from a 3-year-old shrub. We hope to fix a type by breeding. Frequently 1 to 2 pounds of cotton are obtained from a shrub of this variety, and in one instance a 2-year-old plant gave us 4 pounds; this is abnormal, however. Mascote (tree cotton) types frequently give up to 6 pounds per shrub." (*Jones*.)

28712. MORAEA BICOLOR (Lindl.) Steud.

From Glasnevin, Dublin, Ireland. Presented by Mr. F. W. Moore, M. A., director, Royal Botanic Gardens. Received August 29, 1910.

"A South African flowering bulb having a flower 2 inches across, yellow, with beautiful brown spots on the outer segments; style crests yellow." (*Extract from Bailey, Cyclopedia of American Horticulture*.)

Distribution.—The coast region of Cape Colony between the Olifant's and Kei rivers.

28713. BERBERIS FREMONTII Torrey.**Barberry.**

From Tucson, Ariz. Presented by Mr. J. J. Thornber, botanist, University of Arizona. Received August 29, 1910.

"Native barberry from northern Arizona. A very drought-resistant species, and promising as an ornamental." (*Thornber*.)

See No. 12242 for previous introduction.

Distribution.—Slopes of canyons in western Texas, New Mexico, Arizona, and southern California.

28714. ANONA CHERIMOLA Miller.**Cherimoya.**

From Lima, Peru. Presented by the director of the National School of Agriculture and Veterinary Surgery, through Mr. Edw. J. Habick. Received through Rev. V. M. McCombs, Callao, Peru, August 30, 1910.

28715 to 28730.

From Durban, Natal, South Africa. Presented by Prof. J. Medley Wood, director, Botanic Gardens. Received July 25, 1910.

Seeds of the following trees and evergreen shrubs:

28715. *ASSONIA SPECTABILIS* (Bojer) Kuntze.

Distribution.—In the Mozambique district of East Africa, and in Madagascar and Mauritius.

28716. *BAUHINIA GALPINI* N. E. Brown.

Distribution.—Along the coast of southeastern Africa, in the Makua district of Mozambique, and in the vicinity of Barberton in the Transvaal.

28717. *BAUHINIA PETERSIANA* Bolle.

Distribution.—The vicinity of Senna in Zambesiland, at the foot of Mount Moramballa and in the Manganya Hills in the Mozambique district of tropical Africa.

28718. *BAUHINIA PICTA* (H. B. K.) DC.

Distribution.—The valley of the Magdalena River, in the northern part of Bolivia.

28719. *BOSCIA UNDULATA* Thunb.

Distribution.—In the primitive woods in the vicinity of Uitenhage and district of George in Cape Colony; also in the island of Mauritius.

28720. *BRUNSFELSIA AMERICANA* L.

28721. *CALPURNIA AUREA* (Lam.) Benth.

Distribution.—In Abyssinia, the highlands of Huilla and Golungo Alto in Lower Guinea, and in the vicinity of Durban in Natal.

28722. *CARISSA GRANDIFLORA* (E. Mey.) DC.

See Nos. 11734 and 13239 for previous introductions.

28723. *DOVYALIS CAFFRA* (Hook. and Harv.) Warb.

Distribution.—The eastern districts of Cape Colony and in Kafirland, South Africa.

See No. 3724 for description.

28724. *DRACAENA RUMPHII* (Hook.) Regel.

Distribution.—In woods along the eastern coast of Cape Colony, from near Uitenhage northward to Pondoland.

28725. *INDIGOFERA* sp.

28726. *MIMOSA RUBICAULIS* Lam.

Distribution.—Afghanistan and India, rising to an elevation of 5,000 feet in the western Himalayas.

28727. *MORAEA IRIDIODES* L.

See No. 13732 for previous introduction.

Distribution.—Tropical and South Africa, extending from the valley of the River Umba in German East Africa and from British Central Africa southward to Cape Colony.

28728. *TECOMA BERTEROI* DC.

Distribution.—On the island of Haiti in the West Indies.

28715 to 28730—Continued.**28729. OPHIOBOSTRYX VOLUBILIS (Harvey) Skeels.**

(*Bowiea volubilis* Harvey; Hooker, Botanical Magazine, vol. 93, pl. 5619. 1867.)

The original generic name given this curious liliaceous plant is invalid since it had been used by Haworth 43 years earlier (Philosophical Magazine, vol. 64, p. 299, 1824) for another proposed genus belonging to the same family. No other name has been applied to the later genus *Bowiea*, and *Ophiobostryx* is therefore proposed, in allusion to the leafless asparaguslike branches suggesting snaky locks, such as supplanted hair on the head of the monster Medusa, according to classical mythology. The genus has only one species, *O. volubilis*.

Ophiobostryx volubilis was first sent to the Royal Gardens, Kew, by Henry Hutto, of Grahamstown, South Africa, and has since been found at Katberg in the Stockenström division of the coast region, in the Orange River Colony and Transvaal, in the Kalahari region, and near Transkei, Kokstad, and Durban, in the eastern part of Cape Colony.

28730. MONDIA WHITEII (Hook. f.) Skeels.

(*Chlorocodon whiteii* Hook. f., Botanical Magazine, pl. 5898, 1871.)

The generic name *Chlorocodon*, "in allusion to the bell-like green flowers," was applied to this plant in 1871 by Sir Joseph Hooker (Botanical Magazine, vol. 97, pl. 5898), who was doubtless unaware that the name had been used by Fourreau in 1869 (Annales de la Société Linnéenne de Lyon, n. s., vol. 17, p. 113) for a proposed genus of ericaceous plants. No other name appears to have been used for the later genus known as *Chlorocodon*, and since a new name is necessitated *Mondia* is proposed, this being an adaptation of the native name "Mondi," or "Mundi," applied to this plant.

Mondia whiteii was originally described from Fundisweni, Natal, but has since been collected at Yaunde in Kamerun; Bumbo, Pungo Ndongo, and other places in Angola; also at Karagwe and Bukoba in German East Africa, and in Nyasaland.

28731 and 28732. SOLANUM MAGLIA Schlecht. Wild potato.

From Marseille, France. Presented by Dr. Edouard Heckel, director, Botanic Garden. Received September 1, 1910.

28731. Fourth generation, violet.

28732. Fourth generation, violet.

Distribution.—See No. 28705.

28733 to 28738.

From Fort Hall, Nairobi, British East Africa. Presented by Mr. J. McClellan, Provincial Commission. Received July 29, 1910.

Seeds of the following:

28733. ANDROPOGON SORGHUM (L.) Brot.

Sorghum.

"This lot represents a mixture of two of the East African sorghum types, probably durras, one with white seeds and one with red. Such mixtures are commonly received from central East Africa and from Abyssinia, but the varieties have always proved too late to mature in this country." (*Carleton R. Ball.*)

28734. CAJAN INDICUM Spreng.

28733 to 28738—Continued.**28735.** CHAETOCLOA ITALICA (L.) Scribn.**28736.** DOLICHOS LABLAB L.

Bonavist bean.

28737. ELEUSINE CORACANA (L.) Gaertn.

Ragi millet.

28738. PENNISETUM AMERICANUM (L.) Schum.

Pearl millet.

28739. CERATONIA SILIQUA L.**Carob.**

From the estate of the Comte de Puerto Hormosa, at Pizarra, near Malaga, Spain.

Received through Mr. R. S. Woglum, September 6, 1910.

"These cuttings were taken from the best carob tree I saw in Spain. A magnificent tree, fully 30 feet high and noted for being very prolific in fruit." (*Woglum.*)

28740 to 28744.

From Mauritius. Presented by Mr. G. Regnard, Port Louis. Received September 2, 1910.

Seeds of the following; quoted notes by Mr. Regnard:

28740. PECTINEA PAUCIFLORA (Thouars) Skeels.

(*Erythrospermum pauciflorum* Thouars, Veg. Iles Austr. Afr., p. 67, pl. 21, fig. 1, 1806.)

(*Erythrospermum mauritianum* Baker, Flora of Mauritius and Seychelles, p. 10, 1877.)

The genus *Pectinea* was published by Gaertner in 1791 (*De Fructibus et Seminibus Plantarum*, vol. 2, p. 136, pl. 111, fig. 3), with *P. zeylanica* as the only species, while the name *Erythrospermum*, often applied to this genus, appears to have been used no earlier than 1792 or 1793 on a plate published by Lamarck (*Encyclopédie Méthodique*, pl. 274). No description accompanied this plate and the text explaining it was not published until even a later date. The first publication of a description of the genus under the name *Erythrospermum* appears to have been effected in 1806 by Thouars (*Histoire des Végétaux Recueillis dans les Isles Australes d'Afrique*, p. 65), who states that Lamarck's figure only had appeared. There is apparently no reason, therefore, why Post and Kuntze, *Lexicon Generum Phanerogamarum*, should not be followed in the restoration of Gaertner's name, *Pectinea*, published 15 years earlier than *Erythrospermum*.

Pectinea pauciflora was originally described by Thouars from Mauritius and is still unknown elsewhere in an indigenous state.

"*Bois Manioc* or *Bois Cochon*. Small tree. Fruit globose, hard, $\frac{1}{4}$ to 1 inch thick. Found in mountain woods in Mauritius."

28741. EUGENIA GLOMERATA Lam.

"*Bois de Pomme*. Berry as large as a pea. Frequent in mountain woods in Mauritius; also in Madagascar."

28742. (Undetermined.)

"*Bois Maigre*. *Bois sans écorce*. *Bois Bigaigon*. Berry $\frac{1}{2}$ inch long. Found in Mauritius in dense woods; also in Reunion."

28743. MERIANA sp.?

"From Pouce Mountain, Mauritius. Pink color."

28744. VOANDZEIA SUBTERRANEA (L.) Thouars.**Woandsu.**

"Bambara ground nuts. Nuts are eaten boiled and are very rich and nourishing. From Africa."

See No. 23453 for further description.

28745. PRUNUS sp.**"Plumcot."**

From Harput, Turkey. Presented by Mr. William W. Masterson, American consul. Received August 26, 1910.

"An unusually fine-tasting fruit that might be called a 'plumcot.' It was about the size of a greengage plum, of a light-yellow color, and had a decided apricot flavor, indicating that it was a hybrid between the plum and the apricot." (*Masterson.*)

28746. SOLANUM COMMERSONII Dun.**Wild potato.**

From Montevideo, Uruguay. Presented by Mr. Fred W. Goding, American consul. Received September 6, 1910.

Tubers.

28747. SOLANUM sp.**Wild potato.**

From Asuncion, Paraguay. Presented by Mr. T. R. Gwynn. Received September 6, 1910.

"The wild potato is here in profusion. The plant and leaf are almost exactly like the cultivated varieties, but the roots are very different. It puts forth a long underground stem to the end of which the potatoes are attached. These are sometimes as large as a walnut, hull and all, though generally much smaller." (*Gwynn.*)

28748 to 28751. MANGIFERA INDICA L.**Mango.**

From Poona, Bombay, India. Purchased from the Empress Botanical Gardens. Received August 31, 1910.

Seeds of the following:

28748. *Badsha.*

28750. *Gudbeli.*

28749. *Fernandez.*

28751. *P'ote (?)*.

28752 to 28760. MANGIFERA INDICA L.**Mango.**

From Seharunpur, India. Purchased from the Government Botanic Gardens. Received August 31, 1910.

Seeds of the following:

28752. *Gola.*

28757. *Fajri (long).*

28753. *Khaparia.*

28758. *Lamba Bhadra.*

28754. *Langra.*

28759. *Malda.*

28755. *Bombay (green).*

28760. *Najibabadi.*

28756. *Fajri (round).*

28761 and 28762.

From Palestine. Purchased from Mr. Aaron Aaronsohn, director, Jewish Agricultural Experiment Station, Haifa, Palestine. Received August 22, 1910.

Seeds of the following:

28761. *VICIA ERVILIA (L.) Willd.*

Bitter vetch.

28762. *LATHYRUS SATIVUS L.*

"I think that *Lathyrus sativus* will make a quicker growth in the California orange orchards than *Vicia ervilia*, and for this reason I believe it will be better adapted as a green manure. Furthermore, I believe it will make a heavier growth and give a bigger yield than *Vicia ervilia*; at least, this is its behavior in Palestine, where I have had experience with both species. In my opinion *Lathyrus sativus* is in no way inferior to the fenugreek, which has been used so successfully in the orange orchards in Cali-

28761 and 28762—Continued.

fornia. There might be a possible advantage in trying *L. sativus* in place of fenugreek, inasmuch as the seed is cheaper." (*Aaronsohn.*)

28763. ANONA MONTANA MacFayden.

From Mayaguez, Porto Rico. Presented by Mr. W. E. Hess, assistant horticulturist, Agricultural Experiment Station, through Mr. P. J. Wester. Received August 23, 1910.

"A small tree indigenous to the West Indies; the fruit is subglobose, muricate, and the flesh dry and unedible.

"Introduced for trial as a stock for the cultivated anonas." (*Wester.*)

28764. ZIZIPHUS JUJUBA Miller.

From Las Cruces, N. Mex. Presented by Mr. David Griffiths. Received September 8, 1910.

"The trees from which these seeds were obtained were loaded with fruit. There are only two alive; one is 12 feet high. The trees are probably about 12 to 15 years old, but have had very poor conditions and are badly crowded." (*Griffiths.*)

28765. PHASEOLUS MAX L.

From Port of Spain, Trinidad. Presented by the assistant secretary of the Board of Agriculture at the request of Mr. R. B. Dickson. Received August 23, 1910.

28766. HELYGIA PADDISONI (Baker) Skeels.

(*Parsonsia paddisoni* R. T. Baker, Proc. Linn. Soc. N. S. Wales, vol. 24, p. 385, 1899.)

The original use of the generic name *Parsonsia* was by Patrick Brown in 1756 (Natural History of Jamaica, p. 199, pl. 21, fig. 2), for a species later published by Linnæus as *Lythrum parsonsia*, a plant of the family Lythraceæ. The genus *Parsonsia* as proposed by Brown was recognized in 1763 by Adanson (Familles des Plantes, vol. 2, p. 234), whose description and citation completed the technical publication of the name. *Parsonsia* is therefore the valid name for *Cuphea*, the genus to which *Lythrum parsonsia* was later referred. This original use of *Parsonsia* by Patrick Brown and Adanson invalidates its use by Robert Brown in 1809 (Memoirs Wernerian Natural History Society, vol. 1, p. 64) for the apocynaceous genus to which the species given above belongs. Several other generic names have been proposed for various species of this genus, and the earliest of them, *Helygia*, published by Blume in 1826 (Bijdragen tot de flora van Nederlandsch Indië, vol. 2, p. 1043) with *H. javanica* as the type, is recognized as the valid name for the group, and the species under consideration is accordingly transferred to it.

Helygia paddisoni was originally described from New Angledool, New South Wales, and is not known to occur elsewhere.

From Sydney, New South Wales, Australia. Presented by the curator, Department of Public Instruction, Technical Education Branch, Technological Museum. Received August 30, 1910.

"A glabrous woody climber. Leaves opposite, glabrous on both sides. The stem is about 1 inch in diameter a foot or so above the ground, the bark being of a quite corky nature.

"Stock are very fond of the leaves, so that this plant should be ranked as a fodder. My attention was first drawn to this plant by Mr. A. Paddison, of New Angledool, who

28766—Continued.

sent for identification a large tuber or 'yam' weighing about 10 pounds, stating that similar 'yams' were eaten both by settlers and aborigines. The interior is composed of a whitish substance, the chemical analysis of which shows only $4\frac{1}{2}$ per cent of carbonaceous principles. It tastes very much like a turnip, both in the raw and cooked condition. The color and consistency of the largest specimens resemble those of the common mangel-wurzel." (*R. T. Baker.*)

"A vine generally found growing at the foot of and twisting itself around some small tree, and that tree in nine cases out of ten a 'wilga' (*Geijera parviflora* Lindl.). The top 'yam' of the plant we dug was 4 inches from the surface, and the deepest that we could find was 21 inches from the surface. We dug up all that we could find, carried them home, and weighed each one separately, 29 'yams' in all. The total weight was $101\frac{1}{4}$ pounds; the heaviest one weighed $12\frac{1}{4}$ pounds." (*A. Paddison.*)

28767 and 28768. MELINIS MINUTIFLORA Beauv. Molasses grass.

From Sao Paulo, Brazil. Purchased from Mr. H. M. Lane, Mackenzie College.
Received September 3, 1910.

Seeds of the following:

28767. "*Negro Head.*"

28768. Ordinary variety.

See Nos. 23201 and 23381 for previous introductions.

28770. SOLANUM JAMESII Torr.

Wild potato.

Collected in the Chiricahua National Forest. Presented by Mr. Arthur H. Zachau, forest supervisor, Portal, Ariz., through the Forest Service. Received September 15, 1910.

28771. SOLANUM sp.

Wild potato.

From Zacatecas, Mexico. Collected by Mr. F. E. Lloyd. Presented by Dr. J. N. Rose, associate curator, United States National Museum, Washington, D. C. Received September 10, 1910.

(Rose No. 08.219.)

28772 to 28779.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, September 2, 1910.

Seeds of the following; notes by Mr. Husbands:

28772. *GEVUINA AVELLANA* Molina.

"(H. No. 595.) *Avellano.* These are fresh seed from the South and therefore hardier than those sent heretofore from central Chile (S. P. I. No. 25611)."

28773. *DRIMYS WINTERI* Forster.

"(H. No. 599.) *Canelo del Sur.*"

Distribution.—Damp slopes of the exposed valleys in the vicinity of the Strait of Magellan in southern Chile.

28774. *GERANIUM ROBERTIANUM* L.

"(H. No. 601.) *Alfilerillo* single."

28775. *ERODIUM* sp.

"(H. No. 602.) *Alfilerillo* double."

28776. *ARISTOTELIA MACQUI* L'Herit.

"(H. No. 603.) White maqui."

See No. 26306 for previous introduction.

28772 to 28779—Continued.**28777.** (Undetermined.)

“(H. No. 605.) A beautiful evergreen lumber tree; name unknown to me.”

28778. *MELICA VIOLACEA* Cav.

“(H. No. 606.) A wild grass from the south of Chile. Is eaten by animals.”

Distribution.—The vicinity of Talcahuano on the coast of central Chile.**28779.** *SANGUISORBA MINOR* Scop.

“(H. No. 607.) A wild grass from the south of Chile. Is eaten by animals.”

See No. 25040 for previous introduction.

28780. *DIOSCOREA* sp.

From Paraguay. Presented by Mr. C. F. Mead, Piropo. Received September 17, 1910.

“This will stand the same amount of frost as tomato vines. The tubers above ground are very similar to potatoes, but the color is dark, from yellow to red. There are also white tubers below the ground, the same as regular potatoes, but these are very small. It may be possible by selection or crossing to induce the plant to bear marketable potatoes, both below and above ground. It is not as heavy a cropper as the regular potato, and the necessity for a trellis upon which it can climb makes its economic value doubtful. It should be planted in the same manner as the potato. Will probably thrive in regions favored by sugar cane and oranges.” (*Mead.*)

28781. *MELOCANNA BACCIFERA* (Roxb.) Skeels. **Muli bamboo.**(*Bambusa baccifera* Roxb., Pl. Corom., vol. 3, p. 37, pl. 243, 1819.)(*Melocanna bambusoides* Trin., in Spreng., Neue Entdeckungen im Ganzen Umfang der Pflanzenkunde, vol. 2, p. 43, 1821.)

The genus *Melocanna* was established by Trinius in 1821 (Spreng., Neue Entdeckungen im Ganzen Umfang der Pflanzenkunde, vol. 2, p. 43), based on the single species *Bambusa baccifera* Roxburgh. Unfortunately the original specific name was changed and in consequence the species has since been known as *Melocanna bambusoides* Trin. The earlier specific name of Roxburgh is here restored.

The species was described by Roxburgh from the Chittagong Mountains in the southwestern part of Upper Burma, India, where it was called “Payu-tullu,” and it is now known to occur on the Khasi and Garrow Hills in Assam, and in Arakan and Tenasserim, in India.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Gardens. Received September 19, 1910.

See No. 21347 for description.

28782. *SECALE CEREALE* L.**Rye.**

From Schlanstedt, Saxony, Germany. Purchased from Mr. W. Rimpau. Received September 19, 1910.

“Old-breeding.”

28783. *ARGANIA SPINOSA* (L.) Skeels.**Argan.**(*Sideroxylon spinosum* L., Sp. Pl., vol. 1, p. 193, 1753.)(*Argania sideroxylum* Roem. and Schult., Syst., vol. 4, p. 502, 1819.)

The genus *Argania* was established by Roemer and Schultes in 1819 (Linn. Systema Vegetabilium Secundum Classes, Ordines, Genera, Species, vol. 4, p. 502) and contained the single species *Sideroxylon spinosum* L., but in transferring the species to

28783—Continued.

the new genus the specific name was changed and the species has since usually been known as *Argania sideroxylum* Roem. and Schult. The original specific name is here restored in accordance with the now nearly universal custom.

The name *Sideroxylon spinosum* as used by Linnæus in the *Species Plantarum* appears to have included two distinct plants, the one under consideration here and that usually recognized as the type, being the one represented by the Plukenet synonym, but not the Malabar plant referred to by the Rheede citation. The species seems to have been originally described by Linnæus in his *Hortus Cliffortianus* from a garden plant, and he is in error in ascribing India as its habitat. The species is known in an indigenous state only in Morocco.

From Tangier, Morocco. Procured by Mr. R. L. Sprague, American consul, Gibraltar, Spain. Received September 17, 1910.

See No. 3490 for description.

28784. CORCHORUS CAPSULARIS L.**Jute.**

From Shanghai, China. Presented by Mr. Nicholas Tsu. Received September 17, 1910.

See No. 1963 for description.

28785. PIRATINERA UTILIS (H. B. K.) W. F. Wight. Palo-de-vaca.

The "cow tree of South America" was first named *Galactodendrum utile* by Humboldt, Bonpland, and Kunth (*Nova Genera et Species*, vol. 7, p. 163) in 1825. In 1830 David Don (*Sweet, Hortus Britannicus*, ed. 2, p. 462) placed the species in the genus *Brosimum*, giving it the name *B. galactodendron*, which in 1880 was corrected by Karsten (*Deutsche Flora*, p. 498) to *Brosimum utile*. The generic name *Brosimum* was published by Swartz (*Nova Genera et Species Plantarum*, p. 12) in 1788, with two species, *B. alicastrum* and *B. spurium*. In 1775, however, Aublet (*Plantes de la Guiane Française*, vol. 2, p. 888, pl. 340, fig. 1) published the genus *Piratinera* with one species, *P. guianensis*, which is considered to be congeneric with *Brosimum alicastrum* Swartz. The change of name from *Brosimum galactodendron* to *Piratinera utilis* was made by Mr. W. F. Wight in the *Century Dictionary and Cyclopedica* (vol. 12, p. 934, 1909) under "palo," subhead "palo-de-vaca."

From Caracas, Venezuela. Presented by Mr. Antonio Valero Lara. Received September 20, 1910.

"This tree grows here in the wooded mountains and highlands as well as along the seacoast." (*Lara*.)

28786 and 28787. CITRUS spp.

From Buitenzorg, Java. Presented by the director, Department of Agriculture. Received September 22, 1910.

Seeds of the following:

28786. CITRUS AURANTIUM L.

Variety *macrocarpa*.

28787. CITRUS MACRACANTHA Hassk.

28788 to 28793.

From Beirut, Turkey. Presented by Mr. Alfred E. Day, through Miss Lanice B. Paton, Hartford, Conn. Received September 20, 1910.

28788 to 29793—Continued.

Seeds of the following:

28788. *MEDICAGO HISPIDA DENTICULATA* (Willd.) Urb. **Bur clover.**

28789. *MEDICAGO ORBICULARIS* (L.) All.

28790. *MEDICAGO* sp.

28791. *TRIFOLIUM AGRARIUM* L.

28792. *TRIFOLIUM CLYPEATUM* L.

Distribution.—In the countries along the eastern part of the Mediterranean from Crete to Syria and Palestine.

28793. *TRIFOLIUM SCUTATUM* Boiss.

Distribution.—On the hills in the vicinity of Smyrna, and in Syria and Palestine.

28794. TALAUMA MUTABILIS Blume.

From Buitenzorg, Java. Presented by the director, Department of Agriculture.

Received June 3, 1910. Numbered September, 1910.

Variety *splendens*.

Distribution.—Along the banks of the rivers in the interior of the province of Bantam, Java.

28796 and 28797.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received September 23, 1910.

Seeds of the following:

28796. *ARTOCARPUS COMMUNIS* Forst.

See No. 26936 for previous introduction.

28797. *MIMUSOPS* sp.

28798. GOSSYPIUM sp.

Wild cotton.

From Riviere du Rempart, Mauritius. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received September 26, 1910.

See Nos. 28879 and 28880 for note.

28799 and 28800. FERONIA LUCIDA Scheffer.

From Buitenzorg, Java. Presented by the director, Department of Agriculture. Received September 16, 1910.

"This plant is known as *Kawis watoe* in Javanese and *Kawista-batoe* in Malayan. It differs from the wood-apple (*Feronia elephantum*) (S. P. I. No. 25888) in having yellowish petals and anthers instead of reddish as that has; also calyces linear-laciniate instead of ovate-acute as in the latter. Occurs in the province of Rembang, Java." (*Extract from Scheffer in Natuurk. Tijds. Ned. Ind., vol. 31, p. 19. 1870.*)

28801 to 28809.

From Batum, Caucasus, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, March 31, 1910.

Seeds of the following:

28801. *AMYGDALUS COMMUNIS* L.

Almond.

"A very small almond, but with thin shell and of good flavor. Said to come from Persia." (*Meyer.*)

28801 to 28809—Continued.**28802. AMYGDALUS COMMUNIS L.****Almond.**

"A large almond with a very hard shell. Said to come from Persia." (*Meyer.*)

28803. CORYLUS AVELLANA L.**Hazelnut.**

"A hazelnut called '*Trepizond.*' A very popular variety and much grown in this section of the Caucasus. Quantities of them are exported to England and America. Selling at 6 and 7 rubles per pood (36 pounds)." (*Meyer.*)

28804. CORYLUS MAXIMA Miller.**Filbert.**

"A small filbert, quantities of which are sold locally." (*Meyer.*)

28805. CORYLUS MAXIMA Miller.**Filbert.**

"A filbert called '*Kerasund.*' Grown quite extensively and exported to England and America. Sells at 8 rubles per pood (36 pounds)." (*Meyer.*)

28806. ELAEAGNUS ANGUSTIFOLIA L.**Oleaster.**

"Sold sparingly as a sweetmeat. Said to come from Turkestan." (*Meyer.*)

28807. PISTACIA VERA L.**Pistache.**

"A very white pistache, of rather poor quality. Said to come from Persia." (*Meyer.*)

28808. PRUNUS DOMESTICA L.**Plum.**

"These plums when dried are used stewed with meats and in soups. Said to come from Persia." (*Meyer.*)

28809. PRUNUS CERASUS L.**Cherry.**

"Said to come from Gori, central Caucasus." (*Meyer.*)

28810. CANARIUM LUZONICUM (Blume) Gray.**Pili nut.**

From Nueva Caceres, Philippine Islands. Presented by the Hon. P. M. Moir, judge, 8th judicial district, Province of Ambos Camarines. Received September 22, 1910.

"These nuts grow in the southern part of Luzon and nowhere else in the Philippines. The tree is quite large and fairly pretty. The nut is the richest in flavor of any nut I have ever eaten, and all the Americans in the Philippines think it the finest nut grown. When the nuts are roasted, if you touch a lighted match to one it will burn like a lamp, it is so rich in oil. I think you will have to have them planted in Florida, southern Louisiana, or Mississippi, where the climate is warm and damp, as that is the kind of climate we have in the southern part of Luzon, and our rains are very frequent and abundant. The ground should be well drained. The trees are male and female, and it will take five or six years for them to bear nuts." (*Moir.*)

See Nos. 21860 and 23536 for previous introductions.

28811. PSIDIUM GUAJAVA L.**Guava.**

From Tlacotalpan, Vera Cruz, Mexico. Presented by Mr. Edward Everest. Received September 26, 1910. To be grown in connection with the guava-breeding work.

"An evergreen, arborescent shrub, 10 to 20 feet tall, indigenous to the tropical mainland of America whence it has been introduced to practically all parts of the Tropics. The fruit is round, oblong, or pyriform, the best forms attaining a weight of 8 to 10 ounces. The surface is smooth, yellowish, and the flesh, in which the numerous seeds are embedded, whitish, yellowish, or reddish and usually very aromatic. The quality and flavor vary exceedingly, certain types being flat and insipid, others very sweet, and still others more or less acid. The sweet and subacid sorts may be eaten

28811—Continued.

with cream as a dessert fruit, with sometimes sugar added. From the acid fruits a superior jelly is manufactured. By-products obtained in its manufacture are guava marmalade and guava cheese.

"The guava succeeds practically on all classes of land, even poorly drained land, if it is properly cared for and fertilized. Where the temperature during the winter frequently drops below 26° F., its cultivation ceases to be profitable.

"The seed should be sown thinly in flats and the young plants pricked off about 2 to 3 inches apart; keep dry to prevent damping off. When the plants are 6 inches tall they may be transplanted to the nursery, and they are ready for budding when the stems are hardly half an inch in diameter. If the operation is performed during the winter or spring the plants may readily be budded, using the method of shield budding. To obtain the best results, well-ripened budwood from the current year's growth should be used and the buds tied with grafting tape. With good care the plants are ready for planting in the field nine months after insertion of the bud. Twenty to twenty-five feet apart is a good distance at which to plant the guava." (*P. J. Wester.*)

Seeds.

28812. FURCRAEA sp.

From Nice, France. Presented by Dr. A. Robertson-Proschowsky. Received September 29, 1910.

Bulbils. For description see No. 29320.

28813 to 28815.

From the Gaucin district, Spain. Procured by Mr. R. L. Sprague, American consul, Gibraltar, Spain. Received September 29, 1910.

Seeds of the following:

28813 and 28814. LATHYRUS SATIVUS L.

28813. Large seeded.

28814. Small seeded.

28815. VICIA ERVILLA (L.) Willd.

Bitter vetch.

28816 to 28822. MANGIFERA INDICA L.

Mango.

From Lal-Bagh, Bangalore, India. Procured from Mr. G. H. Krumbiegel, economic botanist with the Government of Mysore, Government Botanic Gardens. Received September 26, 1910.

Seeds of the following; notes by Mr. Krumbiegel:

28816. "*Amini*. Weight 12 to 15 ounces; size 7 by 3½ inches; color yellowish white with a light-red shade; shape long, with thin seed. Skin thin; pulp yellow and juicy; taste sweet."

28817. "*Badami*. Weight 10 to 12 ounces; size 4 by 3½ inches; skin greenish yellow with reddish-orange shoulder; pulp fine, dark-cream color, of the finest piquant and delicate flavor. The keeping qualities of this fruit are excellent, and it is generally admitted to be the best of the mangos."

28818. "*Mulgoa*. Weight 16 to 25 ounces; size 7 by 5 inches; color yellow and green; pulp pale yellow; fiberless; very sweet; thin stone and thick skin. One of the latest varieties. Keeps for a long time; a good variety for shipping; one of the best."

28819. "*Puttu*. Weight 12 to 18 ounces; size 5 by 4½ inches; color dark green; thick skin; orange-white pulp; stone very small as compared with the size; taste not very sweet; juicy and fiberless."

28816 to 28822—Continued.

28820. "*Rasperi*. Weight 12 to 15 ounces; size 6 by $4\frac{1}{2}$ inches; color greenish yellow with dark spots and red shade; pulp yellow, fiberless; thin skin; taste good; flavor pleasant. Profusely fruiting. One of the earliest varieties."

28821. "*Romani*. Weight 10 to 14 ounces; size 4 by $3\frac{1}{2}$ inches; skin very thin; pulp pale yellow; color varying from pale yellow with reddish spots to golden yellow; taste sweet; stone very small. Fruits on trees look like apples from a distance. A long-keeping variety, quite fit for long journeys."

28822. "*Sundersha*. Weight 15 to 20 ounces; size 8 by $4\frac{1}{2}$ inches; color yellowish red; pulp white; stone thin and flat; skin thick; unripe ones are also sweet; shape long, with a pointed curve like that of a parrot's bill. A late variety."

28823 and 28824.

From Oregon. Presented by Mr. George R. Schoch, R. R. No. 1, Forest Grove, Oreg. Received August 26, 1910.

Seeds of the following:

28823. *LATHYRUS POLYPHYLLUS* Nutt.

From northwestern Oregon, altitude 800 feet. Crop of 1910.

"A perennial species with violet-colored flowers, abundant in the open coniferous woods throughout western Washington and western Oregon. The plants appear in early spring and become fully mature and dry in July. Stock are not fond of the plant when green, but eat the hay readily." (C. V. Piper.)

28824. *VICIA GIGANTEA* Hook.

Giant vetch.

From northwestern Oregon, latitude $45^{\circ} 32'$, longitude $46^{\circ} 8'$, altitude 1,000 feet. Crop of 1910.

"A perennial vetch with ochroleucous flowers, growing along the Pacific coast from Sitka to middle California. It grows to a great size, the vines being often 8 to 10 feet long and producing a great abundance of plants and pods. The seeds, however, are ordinarily destroyed by insects. Stock ordinarily will not eat the plants while green and are not particularly fond of the hay. The entire plant turns black on drying." (C. V. Piper.)

28825. CATHA EDULIS Forsk.

Khat.

From Aden, Arabia. Procured by Mr. Charles K. Moser, American consul. Received August 24, 1910.

"Khat is the Arabic name for *Catha edulis*, a shrub grown commercially in only two localities in the world, the Yemen and near Harrar in Abyssinia. The word is said to be derived from another Arabic word, kûṭ, meaning food or sustenance, and refers to the most salient property of the plant, that of sustaining one who eats of its leaves under the most extraordinary bodily labor. The Arabs say that life and hard work would be unendurable in their country without khat.

"The shrub is found only in certain localities in the mountains from 3,500 to 5,000 feet above sea level. It will not grow, even in highlands, near salt water, or in any soil containing sand. The height of a full-grown plant varies from 5 to 12 feet, apparently more according to the nature of the climate than to the quality of the soil, as has been demonstrated by the Arabs. It appears that its chief requirements for cultivation are a fair amount of water, a cool but not cold climate, and a soil composed largely of disintegrated stone, well manured with sheep and goat droppings. A peculiarity of the plant is that it will not thrive in soil manured with camel or cattle dung.

28825—Continued.

"In appearance khat is a dark-green shrub of thick foliage, its elliptical leaves varying greatly in size, color, and texture in individual plants. In general the mature leaves will average from $1\frac{1}{4}$ to $1\frac{3}{8}$ inches in length, and from three-eighths to five-eighths of an inch in width, according to the locality in which they are grown.

"Khat is grown altogether from cuttings. Cultivation of it is simple and original. The field is first flooded until the soil has absorbed all the water it can hold; care is taken that the water brings in no sand with it. It is then well mixed with sheep and goat manure and left to 'ripen' for a few days. When the ground is sufficiently dry and 'ripe' they set out the cuttings in shallow holes from 4 to 6 feet apart, with space enough between the rows for pickers to pass easily (usually $2\frac{1}{2}$ to 3 feet). The cuttings grow rapidly and spread widely. They are given shallow hoeing for the first year, by which time the shrub is about 2 feet high, with a spread of perhaps 18 inches. Soft earth is then piled up about the base to conserve all moisture, and the leaves become more numerous. Though it is customary to begin picking the leaves when the plant is a year old, this may not always occur. The Arab follows a different rule. When he sees the leaves being eaten by the birds, he knows they are ripe and of good flavor for the market.

"The khat caravans arrive daily at Aden about 11 a. m. The British Government provides rooms for the storage and sale of the shrub, which later is taxed according to weight. On every 25 pounds of the high-grade kinds the tax is \$0.3244; on the low-grade product (which is used by the common people) the tax is \$0.3244 for every 20 pounds. The only reason advanced for the higher tax being placed on the cheaper khat is that its use is more common and therefore the more to be discouraged.

"Khat is used universally throughout all Arabia. There is no coolie too poor to buy his daily portion of this plant. It is the great fact, next to their religion, in the everyday life of the people. The expense to the native is out of all intelligible proportion to his income, and can only be explained as the Arabs explain it, to wit: that without khat they would not consider life worth living, nor would they ever achieve the energy to do any sustained or arduous work.

"The Arab of Aden who earns 30 cents per day spends at least half of it for khat. In Hodeida the man earning the same wage will average 10 cents per day for the support of his family and expend the other 20 cents wholly on khat. Among the better class the proportion of expenditure is not so high, but it is at least 25 per cent of their incomes, and some of the wealthy will spend several dollars per day for their favorite passion. The fresh leaves and tender stems are always chewed, never brewed or made into any sort of beverage. Nothing is known in Arabia of the chemical constituents of khat." (*Moser.*)

See No. 24714 for previous introduction.

28826. PASSIFLORA EDULIS Sims.**Passion flower.**

From Melbourne, Australia. Presented by Mrs. Alexander Graham Bell, Washington, D. C. Received September 29, 1910.

"Passion fruit will grow in the States; it prefers a loose sandy-loam soil, but must be high enough up to be out of the reach of frosts, and near the sea for preference, within, say, 10 miles. It requires plenty of manure and should be grown on a wire trellis, that is, an ordinary fence with posts 15 feet apart. In place of having the wire as in the fence, nail a crosspiece about 18 inches long on the top of each post and run two wires along this crosspiece. Train the vine up by the main stem until the wires are reached, then run an arm out each side along the wires. The lateral growths will hang down like a curtain and the fruit bears on this lateral growth. Plant vines 15 feet apart, one between each two posts; train vines up a stick until they reach the wire. Rows to be 15 feet apart. The best manure for them is composed of 7 hundredweight

28826—Continued.

of bone dust, 5 hundredweight of superphosphate, and 3 hundredweight of potash, making 15 hundredweight to an acre. If the winter is fairly warm a winter crop can be grown by cutting off the lateral growth a foot below the wires in the late spring or early summer and then manuring, but if the winter is not mild I would simply go in for the natural summer crop—prune as above late in winter and manure early in spring. The vines are raised in seed boxes from the seed. Simply wash the pulp out of the fruit and dry the seed; plant out when about 6 inches high. Do not allow any lateral growth until the wires are reached. We plant in Australia about the end of September or the beginning of October. Shelter young plants until they get started. Some fruit will be obtained the first season and a full crop the second season. The vines are about done in four years. The passion flower does wonderfully well in the sandstone country around Sydney, yet it grows almost wild in the semitropical climate of the northern rivers of New South Wales." (*James Moody, Toomuc Valley Orchards, Melbourne, Australia.*)

See Nos. 1906 and 12899 for description.

28827 and 28828.

From Puerto de Orotava, Teneriffe, Canary Islands. Presented by Dr. George V. Perez. Received September 16, 1910.

Seeds of the following:

28827. CYTISUS PROLIFERUS L.**Tagasaste.**

Variety *palmensis*. "This is a splendid forage plant and very drought resisting. The failures with it are due to ignorance of farmers and to not cutting back the plant. Cattle and horses have to learn to eat it; they relish it ever after. In the island of Palma (Canary Islands), where it is native from time immemorial, it has been used with the greatest success possible. It is quite as nutritious as lucern and does not want irrigation. I know of nothing that will fatten cattle and horses so much. In Palma there are large districts planted with it where cattle and even pigs eat it at liberty. Chaffed and mixed with straw it is excellent. The seed must be scalded in boiling water before sowing." (*Perez.*)

28828. ECHIU SIMPLEX DC.

"The so-called *Pride of Teneriffe*, a lovely, showy, native plant, remarkable for its single tall spike of white flowers reaching from 2 to 3 yards high. From what I have seen and observed I have come to the conclusion that besides being a very ornamental plant it could be turned into a most valuable fodder, beating the prickly comfrey, over which it has the advantage, like all plants of the Canary flora, of being drought resistant. The idea is entirely my own after watching in one of my properties how greedily my cows eat it." (*Perez.*)

28829 to 28832.

From Togo, Africa. Presented by Mr. G. H. Pape, through Mr. A. B. Conner, scientific assistant, Chillicothe, Tex. Received September 29, 1910.

Seeds of the following:

28829. VIGNA UNGUICULATA (L.) Walp.**Cowpea.**

Tan.

28830 to 28832. VOANDZEIA SUBTERRANEA (L.) Thouars.**Woandsu.**

28833 to 28874.

From Ventimiglia, Italy. Presented by Mr. Alwin Berger, La Mortola. Received September 6, 1910.

Seeds of the following:

28833. ACER OBLONGUM Wall.

Maple.

"Tree up to 50 feet in height, with glabrous, entire ovate-lanceolate leaves, coriaceous and glaucous beneath." (*Bailey.*)

See No. 8659 for previous introduction.

Distribution.—Slopes of the temperate Himalayas at an altitude of 2,000 to 5,000 feet, extending from Kashmir to Sikkim in India, and in the vicinity of Hongkong, China, and in the Nansei Islands.

28834. ALTHAEA SULPHUREA Boiss. and Hohen.

Distribution.—Lower slopes of the mountains in northern Persia, Afghanistan, and Sungaria.

28835. ASPARAGUS ACUTIFOLIUS L.

See No. 17981 for description.

Distribution.—The countries bordering on the Mediterranean Sea from Portugal and Spain through Italy and Greece to Syria, and in northern Africa.

28836. BALLOTA PSEUDODICTAMNUS (L.) Benth.

"A white-woolly, herbaceous plant, wool densely floccose, leaves orbiculate, entire or obscurely crenate, base broadly cordate, petiole short, corolla white spotted with red, upper lip cut at the apex, bearded within." (*Willkomm and Lange, Prodromus Florae Hispanicae.*)

Distribution.—In waste places and dry fields in Greece and the island of Crete.

28837. BALLOTA HISPANICA (L.) Benth.

"An herbaceous plant, stem white woolly, leaves broadly ovate, obtuse, velvety above, floccosely woolly below, corolla whitish." (*Willkomm and Lange, Prodromus Florae Hispanicae.*)

Distribution.—Dry and stony places in Spain, Italy, Sicily, and Dalmatia.

28838. BENINCASA CERIFERA Sav.(?)

28839. BERBERIS NAPAULENSIS (DC.) Spreng.

Barberry.

"The fruit of this evergreen species is edible. The plant is hardy to latitude 59° 55' in Norway (*Schuebeler.*)" (*Von Mueller.*)

See No. 8853 for previous introduction.

Distribution.—On the lower slopes of the Himalayas at an elevation of 4,000 to 8,000 feet from Gurhwal to Bhutan in northern India, and on the Khasi Hills in southern India.

28840. BUDDLEIA BRASILIENSIS Jacq.

"An evergreen tender shrub with orange flowers." (*Johnson's Gardeners' Dictionary.*)

A shrub with ovate leaves united around the square stem, native of Brazil.

28841. BUDDLEIA GLOBOSA Hope.

See No. 1576 for description.

28833 to 28874—Continued.**28842. CELTIS OCCIDENTALIS L.****Hackberry tree.**

"Height reaching to 80 feet. Will grow tolerably well even on the poorest soil. (*B. E. Fernow.*) Hardy as far north as Christiania. Wood rather soft, difficult to split." (*Von Mueller.*)

28843. CISTUS ALBIDUS $\times$ CRISPUS.**28844. CLEMATIS INTEGRIFOLIA L.**

"Herbaceous, erect, becoming 2 feet high; leaves rather broad; flowers solitary, blue. Blooms from June to August." (*Bailey.*)

Distribution.—Central Europe and Asia, extending from Austria and Hungary eastward through central Russia and Siberia.

28845. CRATAEGUS CRENULATA Roxb.

"Shrub with branchlets and petioles rusty pubescent, at length glabrous; leaves oblong to oblanceolate, leathery, bright green and glossy above; corymbs glabrous; fruit globose, bright orange-red; blooms in May and June." (*Bailey.*)

Distribution.—Dry places on the slopes of the Himalayas at an altitude of 2,500 to 8,000 feet, between Sirmur and Bhutan, northern India.

28846. CRATAEGUS sp.**28847. CROTALARIA CAPENSIS Jacq.**

"Stout, much-branched shrub, 4 to 5 feet high. Cultivated in Florida." (*Bailey.*)

Distribution.—Common in the eastern districts of Cape Colony, extending northward to Durban.

28848. EUCALYPTUS CREBRA Muell.**Narrow-leaved ironbark.**

"A tall tree. Bark persistent throughout, dark, almost blackish, ridged, and deeply furrowed, solid; timber heavy, hard, elastic, and durable; used for railroad ties, piles, fence posts, and in the construction of bridges and wagons; also suitable for splitting into palings." (*Bailey.*)

See No. 769 and 1622 for previous introductions.

Distribution.—Between the Flinders and Lynd Rivers in North Australia, in the vicinity of Moreton Bay in Queensland, and along the Hastings River in New South Wales.

28849. EUCALYPTUS LEHMANNI (Schauer) Preiss.**Lehmann's gum.**

"A tall shrub or small tree; bark coming off in irregular sheets, roughish and reddish; flowers greenish yellow. A valuable ornamental tree. Blooms July to September.

Distribution.—West Australia, extending along the southern coast east to King George Sound, and on stony hills from Bald Island and Stirling Mountains eastward to Cape Arid.

28850. PODACHAENIUM EMINENS (Lag.) Baill.

"A tall shrub; on account of the grandeur of its foliage in requisition for scenic effects." (*Von Mueller.*)

Distribution.—Southern Mexico and Central America, extending from Orizaba southeastward through Guatemala to Costa Rica.

28851. IRIS ALBOPURPUREA Baker (?)

Received in a shipment from Japan without any information as to the locality from which it came.

28833 to 28874—Continued.**28852. IRIS ATTICA** Boiss. and Heldr.

"Stem short or almost none; leaves wide, falcate, equaling or longer than the spathe; limb violet or yellow, external segments slightly shorter, reflexed, bearded within." (*Bailey.*)

Distribution.—In stony places on the lower slopes of Mount Parnassus and in the province of Attica in Greece.

28853. IRIS CENGIALTI Ambrosi.

"Resembles *Iris pallida*, of which it is probably merely a dwarf variety; leaves 6 inches long, stem about as long as leaves, flowers bright lilac, outer segments with a white beard. Blooms May and June." (*Bailey.*)

Distribution.—Slopes of the Tyrolese Alps in southern Austria and northern Italy.

28854. IRIS SPURIA DAENENSIS Kotschy.

Distribution.—This subspecies comes from the southern part of Persia.

28855. IRIS FOETIDISSIMA L.

"This plant is very distinct and is easily recognized by the odor of the broken leaves. The capsules remain on the plant in the winter, bursting open and displaying rows of orange-red berries. The flowers are rather inconspicuous." (*Bailey.*)

Distribution.—Central and southern Europe and eastward to Afghanistan and in Algeria.

28856. IRIS GERMANICA L.

"Leaves 1 to 1½ feet long; stem 2 to 3 feet high; spathe valves tinged with purple; outer segments obovate-cuneate, 2 to 3 inches long; beard yellow; inner segments as large, obovate, connivent. Blooms in early May and June." (*Bailey.*)

See No. 9103 for previous introduction.

Distribution.—Throughout central and southern Europe.

28857. IRIS HALOPHILA Pallas.

"Leaves pale green, 1 to 1½ feet long; stem stout, terete, 1½ to 2 feet long, often bearing one to two spicate clusters below the end one; limb pale yellow; outer segments with an orbicular blade one-half to three-fourths of an inch broad, shorter than the claw, which has a bright-yellow keel and faint lilac veins; inner segments shorter, erect." (*Bailey.*)

Distribution.—Eastern Europe and southern Asia, extending from Austria eastward through Turkey, Asia Minor, and the Caucasus region to Mongolia and Kashmir.

28858. IRIS CHAMAEIRIS ITALICA (Parl.) Baker.

"Leaves 3 to 4 inches long, one-half inch broad; stem very short, flowers dark violet; outer segments obovate-cuneate, tinged and veined with brown; inner segments oblong. Blooms in May." (*Bailey.*)

Distribution.—Southern Europe, extending from southern France and northern Italy through Dalmatia.

28859. IRIS LUTESCENS Lam.

"Leaves 6 to 9 inches long; stem equaling the leaves; flowers pale yellow; outer segments obovate-cuneate, 2 to 2½ inches long, pale yellow, streaked with pale brown, undulate; inner segments broader, suddenly narrowed to a claw which is streaked with purple, crenulate." (*Bailey.*)

Distribution.—Stony mountainous slopes in the southern part of France.

28833 to 28874—Continued.**28860. IRIS SIBIRICA L.**

"Compact, tufted; leaves green, not rigid, 1 to 2 feet long; stem slender, terete, fistulous, much overtopping the leaves, simple or forked, bearing several clusters of flowers; limb bright lilac blue; outer segments $1\frac{1}{2}$ to 2 inches long, with orbicular blade gradually narrowed to a slender claw, veined with bright violet, whitish toward the claw; inner segments shorter, erect. The plants form large compact clumps producing many long flowering stems from the center." (Bailey.)

See Nos. 9104 and 13232 for previous introductions.

Distribution.—Throughout central and southern Europe and eastward to eastern Siberia.

28861. IRIS MISSOURIENSIS Nutt. (?)**28862. IRIS CHAMAEIRIS OLBIENSIS (Henon) Baker.**

Same as No. 28858 except "flowers are bright yellow." (Bailey.)

Distribution.—Northern Italy and southern France and eastward through Dalmatia.

28863. IRIS ORIENTALIS Miller.

Variety *gigantea*.

Distribution.—Asia Minor and Syria, and the island of Samoa.

28864. IRIS PARADOXA Stev.

"Plants dwarf; leaves linear; flowers large, outer segments reduced to a mere claw, dark, covered with pile; inner segments 2 inches long, orbicular, lilac to white. A flower with singular combinations of color. Grows in dry situations, but requires shelter in winter." (Bailey.)

Distribution.—Dry sandy places in the Transcaucasian region of southern Russia and in northern Persia.

28865. IRIS PRISMATICA Pursh (?).**28866. IRIS RUTHENICA Dryand.**

"Leaves 5 to 12 inches long, in crowded tufts; stem slender, 3 to 6 inches long, but often obsolete; tube twice as long as the ovary; outer segments with an oblong blade rather shorter than the claw, lilac, violet scented. Blooms in April and May." (Bailey.)

Distribution.—Eastern Europe and central Asia, extending from Austria eastward through Russia and Siberia to eastern China and Mongolia.

28867. IRIS SETOSA Pall. (?)

Distribution.—Eastern Siberia, Japan, and in northwestern North America.

28868. IRIS HALOPHILA SOGDIANA (Bunge) Skeels.

(*Iris sogdiana* Bunge, Academie de St. Petersburg, Memoires des Savants Etrangers, vol. 7, p. 507, 1850-54.)

(*Iris gueldenstaediana sogdiana* Baker, Irideae, p. 14, 1892.)

The name *Iris gueldenstaediana* was published by Lepechin (Acta Academiae Petropolitanae for 1781, pt. 1, p. 292, pl. 8) in 1784. But Pallas in 1773 (Reise durch Verschiedene Provinzen des Russischen Reichs, vol. 2, p. 733) had published the name *Iris halophila* for the same species. The earlier name should be used for the species, which necessitates transferring the subspecies published by Baker to *I. halophila*.

Same as No. 28857 but "with gray-lilac flowers (Bailey)."

Distribution.—Throughout Asia, from Asia Minor and the Caucasus region eastward to Kashmir and Mongolia.

28833 to 28874—Continued.**28869. IRIS UNGUICULARIS Poir.**

"Leaves about six in a tuft, finally $1\frac{1}{2}$ to 2 feet long, bright green; tube 5 to 6 inches long, filiform, exerted from the spathe; limb bright lilac, rarely white; outer segments $2\frac{1}{2}$ to 3 inches long, 1 inch broad, with a yellow keel, streaked with lilac on a white ground at the throat; inner segments oblong. Blooms in January and February. Not hardy." (*Bailey.*)

Distribution.—A fragrant-flowered species coming from Algeria.

28870. IRIS XIPHIIUM L.**Spanish iris.**

"Leaves about 1 foot long, stem 1 to 2 feet high; pedicel long; tube obsolete; outer segments 2 to $2\frac{1}{2}$ inches long; violet-purple, yellow in the center; inner segments as long, but narrower. Blooms in late June." (*Bailey.*)

Distribution.—Spain and southern France, ascending to an elevation of 6,000 feet, and in northern Africa.

28871. MORAEA sp.

NOTE.—This was received as *Moraea aurantiaca* Eckl., which seems never to have been described.

28872. PISTACIA LENTISCUS L.

See No. 3011 for description.

Distribution.—The countries bordering on the Mediterranean from Spain through Italy, Greece, and Asia Minor to Syria, and in northern Africa.

28873. SALVIA SCLAREA L.

"A plant of exceptional interest. Cultivated for its culinary and medicinal value and also for ornament, but its ornamental value lies not in the flowers, which are pale purple or bluish, but in the colored bracts or floral leaves at the tops of the branches." (*Bailey.*)

Distribution.—Southern Europe and western Asia, extending from Germany eastward through Austria, Italy, Turkey, and southern Russia to Persia, and in northern Africa.

28874. VIBURNUM TINUS L.

See No. 2192 for description.

Distribution.—Southern Europe, extending from Portugal and Spain through southern France and Italy to Dalmatia, and in northern Africa.

28875. BELOU MARMELOS (L.) W. F. Wight.**Bael.**

From Pusa, Bengal, India. Presented by Dr. A. Howard, of the Agricultural Research Institute, through Maj. A. T. Gage, Royal Botanic Gardens, Sibpur, Calcutta, India. Received September 28, 1910.

Dalsing Serai.

See No. 24450 for description of this species.

28876. VITIS sp. (?)

From Hollywood, Cal. Presented by Mr. E. D. Sturtevant. Received September 29, 1910.

"Native of the southern part of the state of Vera Cruz, Mexico. Said to bear beautiful scarlet flowers. It is hardy here, but does not bloom. It might do so in south Florida." (*Sturtevant.*)

28877. CYNARA SCOLYMUS L.**Artichoke.**

From Maison Carree, Algeria. Presented by Dr. L. Trabut, Mustapha-Alger, North Africa. Received September 29, 1910.

Violet Provence.

28878. PASSIFLORA EDULIS Sims.**Passion flower.**

From Patras, Greece. Grown by Mrs. Crowe. Presented by Dr. A. Donaldson Smith, American consul, Aguascalientes, Mexico. Received September 29, 1910.

"I have tasted the passion fruit in many places, but the fruit from which these seeds were taken was the best." (*Smith.*)

See No. 25874 for distribution of this species.

28879 and 28880. GOSSYPIUM sp.**Wild cotton.**

From Mauritius. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received September 26, 1910.

Seeds of the following:

28879. From Yemen, Black River. **28880.** From Carcenass, Black River.

"These cottons (see also No. 28798) grow particularly at the NNE. and NW. of the island at different altitudes and under different soil and climatic conditions without varying in growth and shape." (*Regnard.*)

PUBLICATION OF NEW NAMES.

- 28525. TRITOMA NORTHIAE (Baker) Skeels.
- 28526. TRITOMA TUCKII (Baker) Skeels.
- 28526 (in note). TRITOMA SARMENTOSA (Andr.) Skeels.
- 28663. LEBECKIA CUSPIDOSA (Burch.) Skeels.
- 28673. ECHEVERIA HOVEYI Rose n. sp.
- 28729. OPHIOBOSTRYX VOLUBILIS (Harvey) Skeels.
- 28730. MONDIA WHITEII (Hook. f.) Skeels.
- 28740. PECTINEA PAUCIFLORA (Thouars) Skeels.
- 28766. HELYGIA PADDISONI (Baker) Skeels.
- 28781. MELOCANNA BACCIFERA (Roxb.) Skeels.
- 28793. ARGANIA SPINOSA (L.) Skeels.
- 28868. IRIS HALOPHILA SOGDIANA (Bunge) Skeels.
- 19897. × ASSONIA CAYEUXII (Andre) Skeels.

(*Dombeya cayeuxii* Andre, Revue Horticole, vol. 69, p. 545, 1897.)

The name *Dombeya* (Cavanilles, 1787) seems to have been quite generally used to designate a genus of sterculiaceous shrubs or small trees, but as the same name was originally used (L'Heritier, 1784) for a genus belonging to the family Bignoniaceæ, for which the name *Tourretia* (Fougeroux, 1787) was later proposed, it should not be applied to the genus established by Cavanilles. In fact, the latter author on a previous page of the same work in which he published *Dombeya* established the genus *Assonia* with the single species *A. populnea* (Tertia Dissertatio Botanica, p. 120, pl. 42, fig. 1, 1787). This species is now recognized as congeneric with the various species referred to Cavanilles's *Dombeya*, and *Assonia* should therefore be considered the valid name for the genus in question. It should be noted that both the names *Assonia* and *Dombeya* were proposed by Cavanilles in 1786 (Secunda Dissertatio Botanica, app.), but without mention of species.

Cuttings of the species listed were received in 1907 as "*Dombeya spectabilis*(?)" and were later distributed. Dr. Franceschi of the Montarioso Nursery, Santa Barbara, Cal., who received some of the cuttings, called attention to the identity of the plant with *Dombeya cayeuxii* Andre.

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U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 227.

B. T. GALLOWAY, *Chief of Bureau.*

Mr. Harlan

SEEDS AND PLANTS IMPORTED

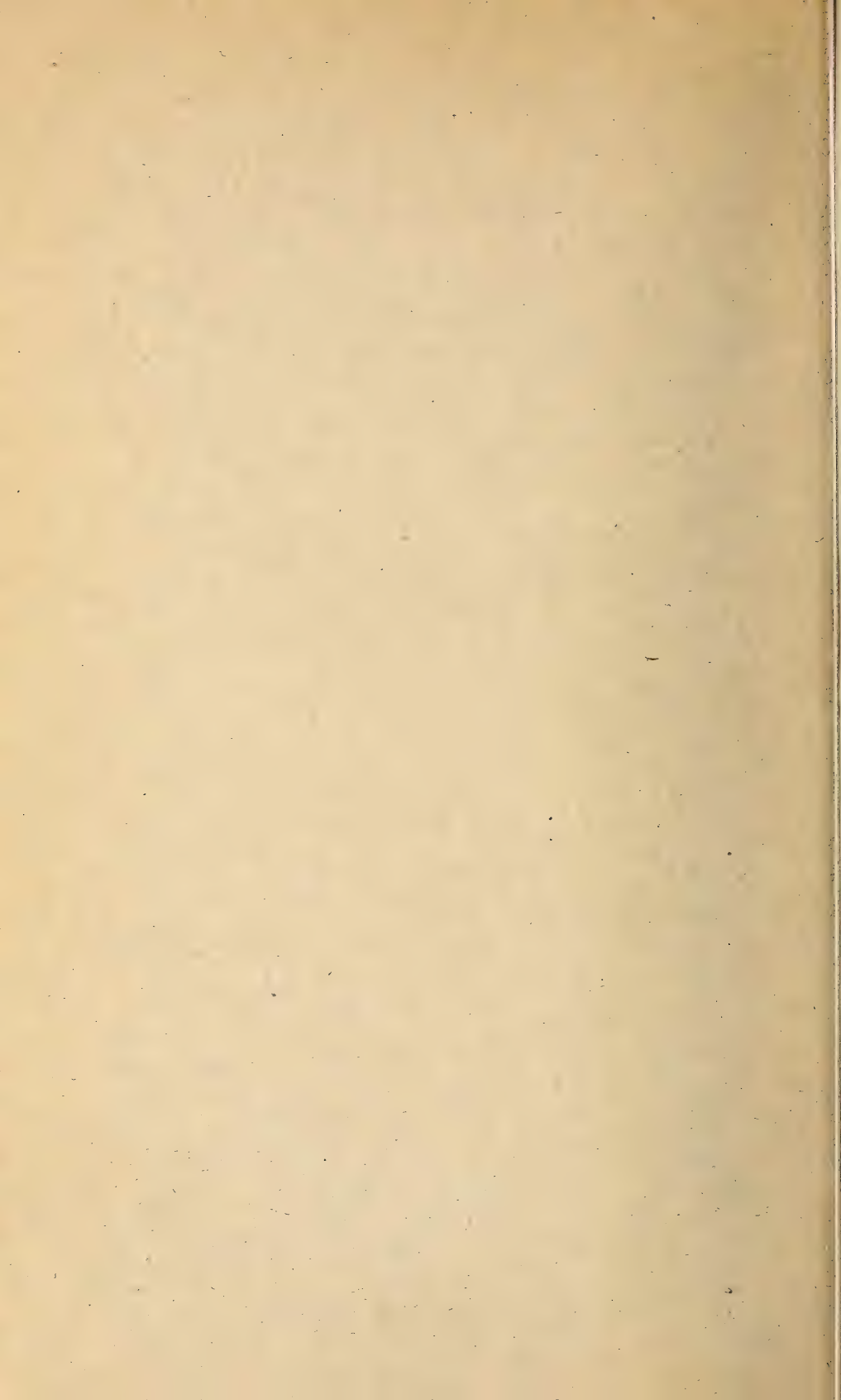
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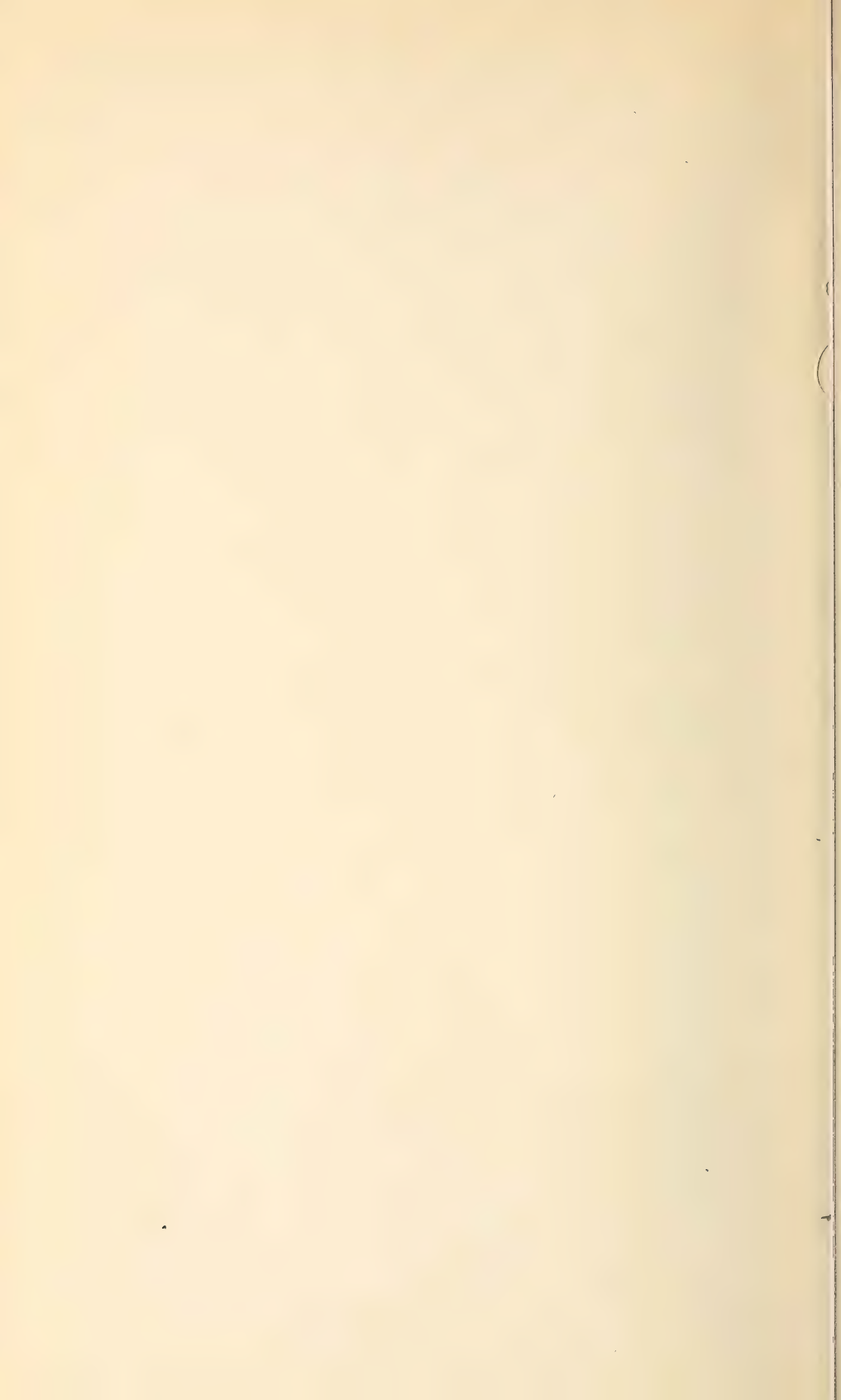
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Chief of Bureau, BEVERLY T. GALLOWAY.

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FOREIGN SEED AND PLANT INTRODUCTION.

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LETTER OF TRANSMITTAL

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., June 16, 1911.

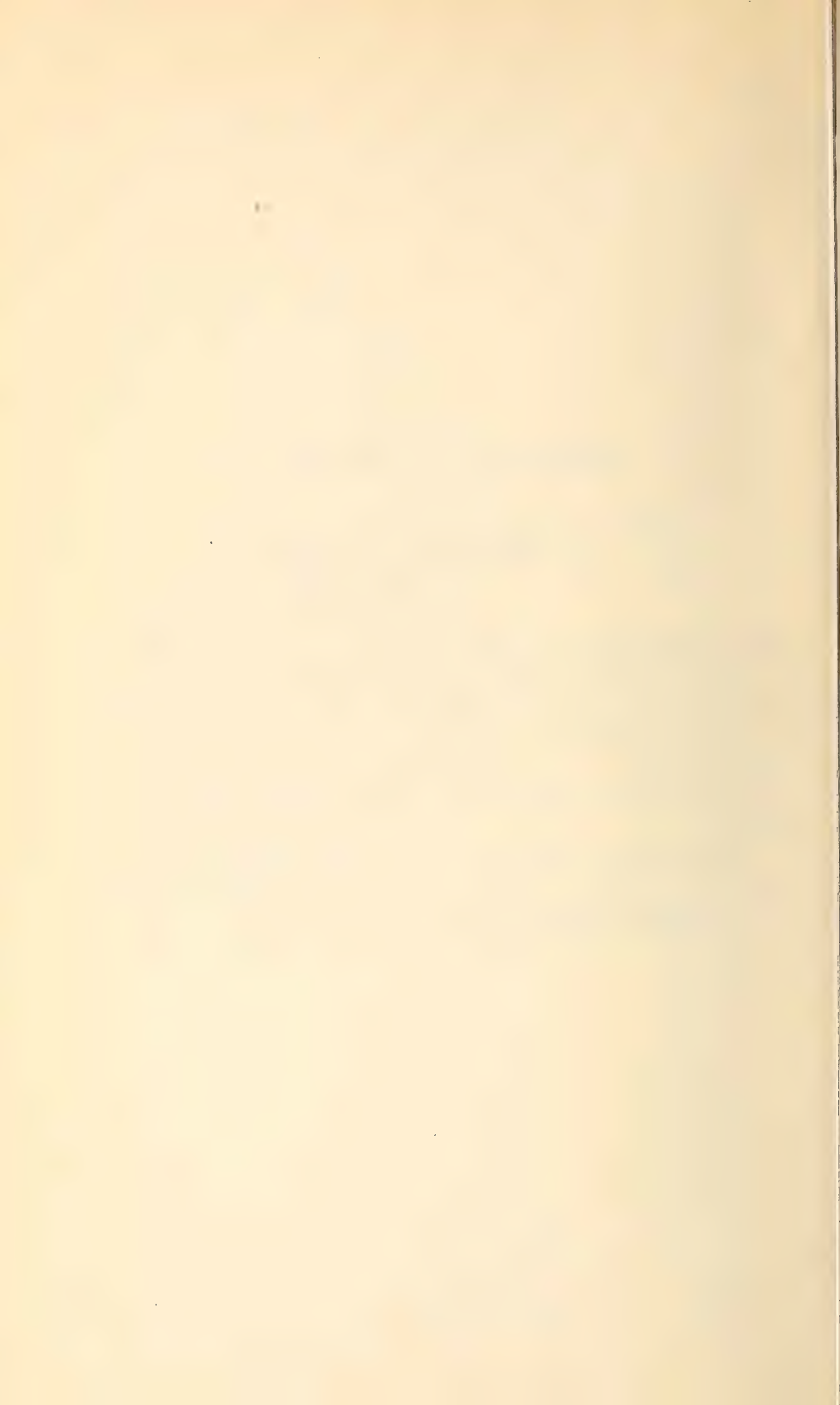
SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 227 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from October 1 to December 31, 1910: Inventory No. 25; Nos. 28883 to 29327."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction, with a view to publication.

Respectfully,

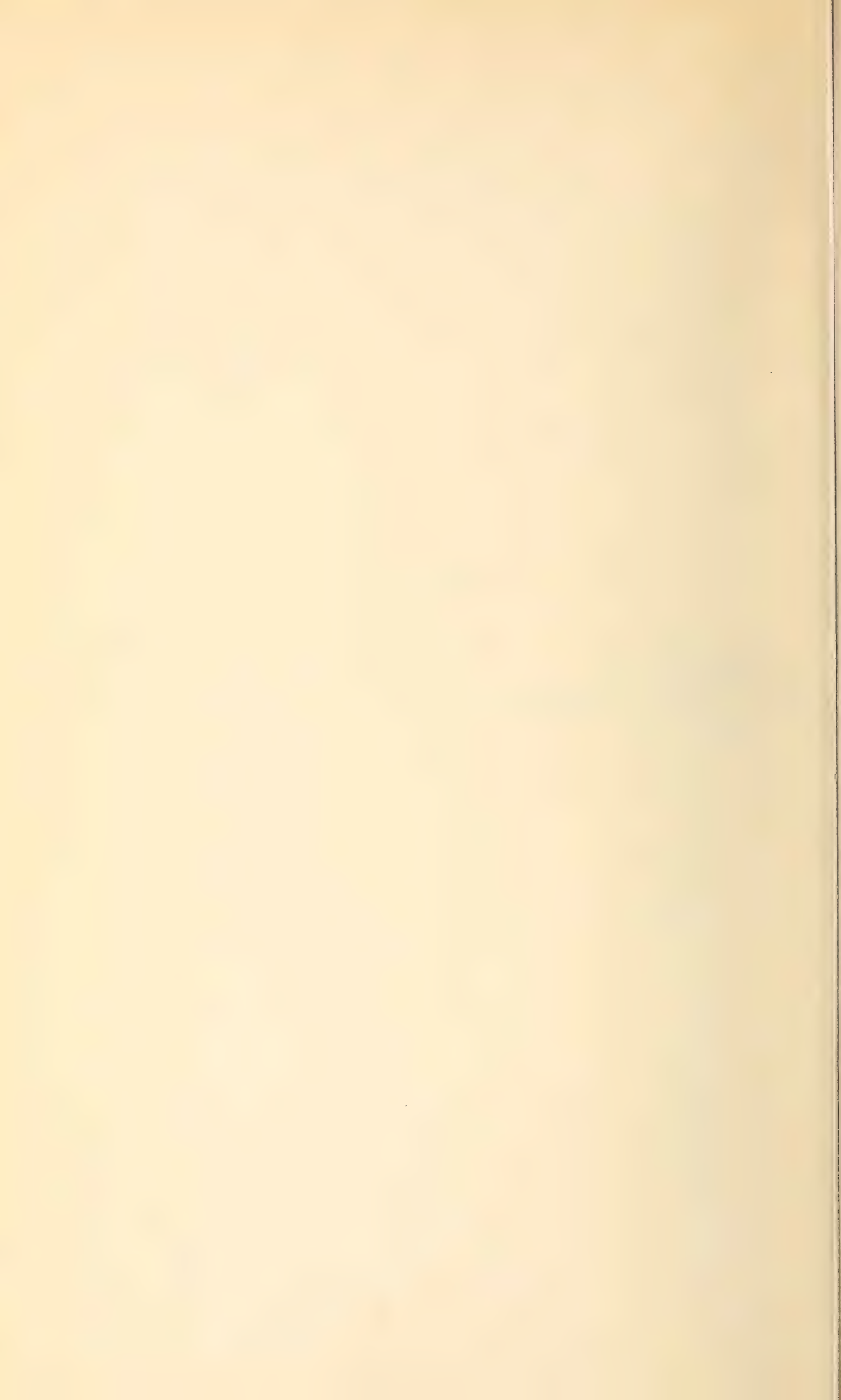
B. T. GALLOWAY,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.



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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM OCTOBER 1 TO DECEMBER 31, 1910: INVENTORY NO. 25; NOS. 28883 TO 29327.

INTRODUCTORY STATEMENT.

The present inventory includes the material collected during the period from June to September, 1910, by Mr. Frank N. Meyer, the only agricultural explorer in the field, who was exploring the region which lies along the Zerafshan Valley and in the vicinity of Samarkand, Tashkend, Old Bokhara, the oasis of Merv, Charchui, Andijan, Guldscha, Terek-Dawan, Osh, Kostakos, Kizil-Kurgan, and Khokan in Russian Turkestan, and the cities of Kashgar, Kan-Shugan, Ulukshat, and Irkestan in Chinese Turkestan. Although Mr. Meyer was hindered from making several important side trips which had been contemplated, he still secured during his stay in this region 141 different specimens, some of which are of special importance. Among them is a hardy dwarf *Prunus* (Nos. 28943 and 28944) from the mountain slopes near Wishist at an altitude of 3,000 to 7,000 feet, which Mr. Meyer suggests may be of value in the breeding of bushy forms of the almond or as a stock for the almond in dry regions. Possibly the suggestion of an economic bush cherry may be realized by American breeders and Mr. Meyer's *Prunus prostrata* (No. 28945) and *Prunus microcarpa* (No. 28946) be utilized in the creation of such a fruit, while the various forms of *Prunus cerasifera divaricata* (Nos. 28948 to 28951 and No. 29224), called "Alitcha" in Turkestan, may be of distinct value to the plum breeders because of their early-fruited character, their remarkable productiveness, and their resistance to drought and heat.

The apricot growers of Turkestan grow varieties which have sweet instead of bitter kernels, which they use for confectionery purposes just as we do the kernels of the almond. Mr. Meyer has imported 11 varieties of these (Nos. 28953 to 28962 and No. 29223) and recommends that the whole subject of the utilization of apricot kernels be studied. This may resolve itself into a comparison between the price of the kernels as a source of prussic acid and their price as a table delicacy.

Probably there is no work so extensive and successful in the binding of drifting desert sands as that carried on at Chartchui, Turkestan, by the Russian Government. The railroad, which was previously in continual danger of being covered by shifting sand dunes, has been completely protected by the use of certain drought and alkali resistant plants, seeds of which Mr. Meyer secured for similar experiments in this country (Nos. 28973 to 28977).

The oleaster is remarkable for its extreme hardiness and resistance to drought, and the importation by Mr. Meyer of a large-fruited form (No. 29225) will interest the horticulturists of the Northwest, who are beginning to see the possibilities of this plant as a hardy fruiting shrub.

The rose breeders will be interested in the wild roses from this region (Nos. 29251 to 29258); the melon growers, in an unusual collection of watermelons and muskmelons; the nut growers, in the almond and Afghanistan pistache; the currant breeders, in the black and red currants which Mr. Meyer has secured.

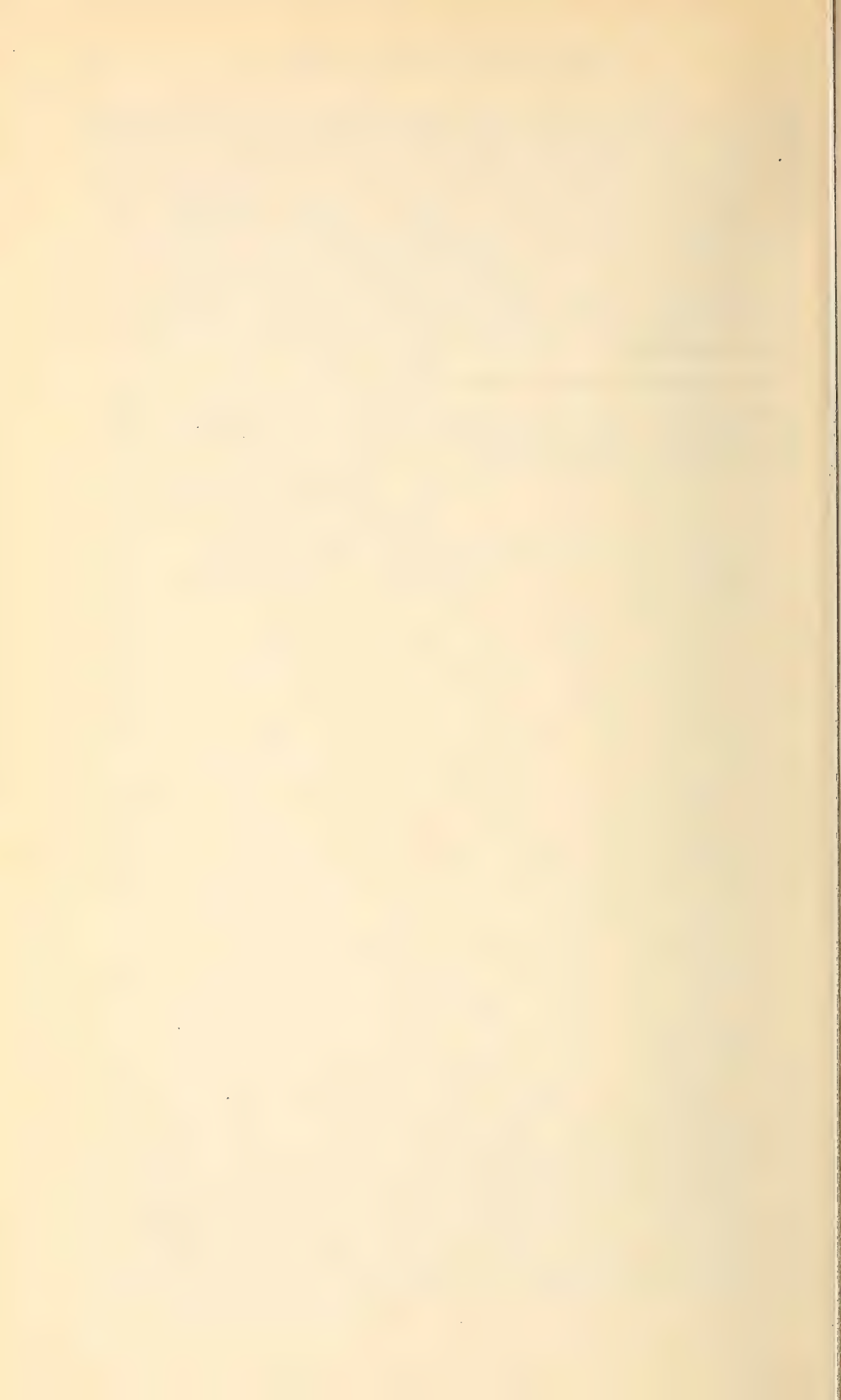
Of material sent in by correspondents, it is worth while to emphasize a new relative of the guava, *Psidium araca* (No. 28911), from Minas Geraes, which is said to be sweeter in taste than the guava; a new variety of alfalfa, which originated in Norway and which is reported to be hardier and larger than the ordinary types grown there (No. 28919); three distinct varieties of the Chinese jujube (Nos. 28926 to 28928); a remarkable citrus relative which lives on the seashore in mangrove swamps in India (No. 28933); a quantity of the wild wheat of Palestine for use in breeding drought-resistant varieties (No. 29026); a leguminous plant, *Cassia mimosoides*, from Assam, recommended as a cover crop in banana plantations to keep down the weeds (No. 29031); the kameel-doorn of South Africa, an extremely hard-wooded, drought-resistant tree (No. 29046); *Passiflora ligularis* (No. 29090), from Mexico, and a variety from Java (No. 29319), relatives of the southern maypop, for breeding experiments with this fruit; one of the largest of the large-leaved trees of the Chinese forests from Hupeh, central China (No. 29095); a new hybrid of the giant wild rose from Burma, *Rosa gigantea* (No. 29096); the Paraguayan tea plant, from which the maté of South America is made, a drink as highly prized by millions of South Americans as tea is by Europeans (No. 29097); four varieties of Japanese sugar cane for trial as a forage plant in the South (Nos. 29106 to 29109); four species of tropical persimmons, related to the edible oriental species, from the island of Ceylon (Nos. 29111 to 29114), for the breeders of this fruit; the yeheb-nut plant, a newly discovered leguminous shrub which occurs in the poor sandy soils of the dry regions of Italian Somaliland and produces nuts which are so sweet and nutritious that in their season the Somaliland natives live on

them in preference to rice and dates; a spineless lime and a seedless lime from Trinidad (Nos. 29123 and 29124); the Aomori chestnut from Hokushu, Japan (No. 29132); the Sampson tangelo, a hybrid between the pomelo and the tangerine which has been originated by the Office of Crop Physiology and Breeding Investigations (No. 29159); and the Etonia or flowering citrange, a hybrid between the common orange and the hardy Japanese trifoliate orange which promises to be a remarkable ornamental tree, with its large white blossoms which nearly hide the foliage (No. 29160), also a product of the same office.

This inventory was prepared by Miss Mary A. Austin, and the botanical determinations are those of Mr. H. C. Skeels, working under the supervision of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., May 16, 1911.



INVENTORY.

28883 and 28884.

From Teneriffe, Canary Islands. Procured by Mr. Ross J. Hazeltine, American vice consul, from Señor Luis Diaz. Received October 3, 1910.

Cuttings of the following:

28883. *PRUNUS ARMENIACA* L.

Apricot.

Yellow.

28884. *PRUNUS* sp.

Plum.

Yellow. "One of the finest I have ever seen." (*Hazeltine.*)

28885. *HORDEUM SPONTANEUM* Koch.

Barley.

From Haifa, Palestine. Presented by Mr. Aaron Aaronsohn, director, Jewish Agricultural Experiment Station. Received October 3, 1910.

28886. *SPONDIAS* sp.

From Mauritius. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received October 14, 1910.

"This is much like the species *dulcis* as regards appearance of the tree and fruit, but not the seeds. The only specimen in Mauritius grows at the Botanical Gardens, Pamplemousses; it has not been classified and seems not to have been noticed." (*Regnard.*)

28887. *CARICA PAPAYA* L.

Papaya.

From Camp Overton, Mindanao, Philippine Islands. Presented by Maj. Charles H. Muir, Twenty-third Infantry, Fort Clark, Tex., through Mr. E. C. Green, in charge, South Texas Plant Introduction Garden, Brownsville, Tex. Received October 3, 1910.

"This seed is from the best variety of this fruit I have ever met with in either the Philippines or Cuba; it is spoken of as the *Dapitan* by some and as the *Java* by others." (*Muir.*)

28888 to 28893. *VIGNA UNGUICULATA* (L.) Walp.

Cowpea.

From the Province of Para, near the town of Bragança, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense, Para, Brazil. Received October 3 and 4, 1910.

Seeds of the following:

28888. Large brown eye.

28889. Pinkish clay-colored seeds.

28890. Brownish clay-colored seeds.

28891. Reddish brown.

28892. Under color brownish clay thickly marked with purplish lines or marblings.

28893. Like the preceding, except that the ground color is almost completely obscured by the purple marblings.

"The two preceding numbers (I believe one of them is a hybrid with some speckled variety) are said to give a luxuriant growth of foliage, but further than this I heard nothing." (*Fischer.*)

28894. RAJANIA PLEIONEURA Griseb.**"Waw-waw."**

From Dominica, British West Indies. Presented by Mr. J. Jones, curator, Botanic Station. Received October 6, 1910.

"The 'waw-waw' is a native of Dominica. It occurs wild in the forests and does best in the deep shade. It is not cultivated in this island, probably because an abundance of the yam can be obtained by digging in the forest.

"The 'waw-waw' is considered by many people to be superior to the yams produced by the dioscoreas." (*Jones*.)

Distribution.—Common in the woods on the island of Dominica, and in Cuba and Porto Rico.

28895 to 28898. COFFEA ARABICA L.**Coffee.**

From Reunion Island. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received October 7, 1910.

Seeds of the following:

28895 and 28896. "*Cafe du Pays*."

28895. From Campon.

28896. From St. Louis.

28897 and 28898. "*Cafe le Roy*."

28897. From Campon.

28898. From St. Louis.

28899. SOLANUM MURICATUM Ait.**Pepino.**

From Grand Canary, Canary Islands. Presented by Mr. M. Moniz, American consular agent pro tem., at the request of Mr. Ross J. Hazeltine, American consul, Teneriffe. Received October 8, 1910.

See No. 23650 for description.

28900. DIOSPYROS DISCOLOR Willd.**Persimmon.**

From Iloilo, Panay, Philippine Islands. Presented by Mr. J. B. O. Colman, Bureau of Public Works. Received October 7, 1910.

"This is a species of persimmon which has a thick and pleasantly flavored meat. The fruits from which these seeds were taken were unusually large and perfect." (*Colman*.)

See No. 26612 for further description.

28901 and 28902. PITTOSPORUM spp.

From Greendale, Canterbury, New Zealand. Presented by Mr. T. W. Adams. Received October 14, 1910.

Seeds of the following:

28901. PITTOSPORUM RALPHII Kirk.

Distribution.—In the Patea district on the southern coast of North Island, and on the Great Barrier Island, off the northern coast of North Island, New Zealand.

28902. PITTOSPORUM TENUIFOLIUM Gaertn.

Distribution.—Along the eastern coasts of the islands of New Zealand extending from the northern island southward to the province of Otago.

"These are small, hardy trees that will bear 20 degrees of frost, but I suppose they will not be hardy at Washington, D. C. (*Adams*.)

28903 to 28905.

The following material presented by Dr. Walter Van Fleet to the Plant Introduction Garden, Chico, Cal., November 30, 1909. Numbered October 17, 1910.

28903. BERBERIS (VULGARIS × THUNBERGII) × STENOPHYLLA. Barberry.

"An interesting blend, combining blood of four species: *Berberis stenophylla* Lindl., being a supposed hybrid of *B. empetrifolia* and *B. darwinii*, an evergreen species from southern Chile. One plant has light-purple foliage and the drooping habit of *B. thunbergii*. (P. I. G. No. 8395.)" (*Van Fleet.*)

Plants.

28904. QUAMASIA LEICHTLINII × CUSICKII.

"A fine, vigorous hybrid, intermediate between parent species. These bulbs are six years from seed. Grown at my place in Little Silver, N. J. (P. I. G. No. 6291.)" (*Van Fleet.*)

28905. IRIS ALBOPURPUREA Baker.

"A beautiful large-flowered iris from Japan, allied to *I. laevigata*. Fall petals white, marbled blue. (P. I. G. No. 8394.)" (*Van Fleet.*)

28906. STIZOLOBIUM ATERRIMUM Piper and Tracy. Mauritius or Bengal bean.

From Herbert River, Queensland. Presented by Mr. J. H. Maiden, director, Botanic Gardens, Sydney, Australia, who obtained them from the Macknade mill of the Colonial Sugar Refining Co. Received October 15, 1910.

"This species is considerably cultivated in the island of Mauritius, Brazil, New Zealand, and Australia. It much resembles the Florida velvet bean, but the vines grow larger and the seeds mature considerably later. This variety is so late, in fact, that it matures in this country only in the southern half of Florida." (*Piper.*)

28907. SACCHARUM SPONTANEUM L.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received October 17, 1910.

"A coarse perennial grass, with long creeping roots, abundant throughout India and up to 6,000 feet in the Himalayas. This grass is largely used as a thatching material, and the leaves are manufactured into ropes, mats, etc. It is a favorite fodder for buffaloes and is also, when young, given to elephants. Native name, *Kans*." (*C. V. Piper.*)

28908. MEDICAGO SATIVA L.

Alfalfa.

From Ti-tao, Kansu Province, western China. Presented by Mr. Berthold Laufer, Field Museum, Chicago, Ill., who procured them from Mr. D. P. Ekvall, an American missionary of Ti-tao. Received October 17, 1910.

28909 to 28911. PSIDIUM spp.

From Theophilo Ottoni, Minas Geraes, Brazil. Presented by Mr. Fred Birch. Received October 17, 1910.

Seeds of the following; notes by Mr. Birch:

28909. PSIDIUM GUAJAVA L.

Guava.

"Seeds from an all-white guava. The tree bears only white fruits, which are about 2 inches in diameter."

28910. PSIDIUM GUAJAVA L.

Guava.

"Seeds from the largest and finest tasting guava I have ever seen or tried. It was nearly 3 inches in diameter, and the flesh and jelly were pinkish red as in the common varieties. The tree grows by a stream near Theophilo Ottoni, Minas Geraes, and most of the fruits have comparatively few seeds."

28909 to 28911.—Continued.**28911. PSIDIUM ARAÇA Raddi.****Guava.**

"The araca grows to about 15 feet (the size of a hazel), and the very pleasant sweet fruits are about an inch or an inch and a quarter in diameter. With good cultivation I feel sure it could be improved. The fruits are just like small guavas, clear yellow when ripe. They taste sweeter, however, and would make excellent preserves."

See No. 26757 for previous introduction.

28912. IRVINGIA GABONENSIS (Aubry-Lecomte) Baill.**Oba.**

From Victoria, Kamerun, Africa. Presented by Mr. F. A. Deistel, director of the experiment station, at the request of the Imperial Colonial Office at Berlin, Germany. Received October 8, 1910.

This is a tree 30 to 50 feet high, with shining leaves, which produces edible fruit said to be about 2½ inches in diameter. The seeds are the source of "Dika butter." This is called "wild mango" by the English residents of Princes Island, where it grows. It is also reported from the Muni and Kamerun rivers in western Africa.

28913. IPOMOEA TUBERCLATA Ker.

Grown at Brookland, D. C., and presented by Miss Carrie Harrison, of the Bureau of Plant Industry, October, 1910.

"Last spring I purchased in the Center Market of Washington a promising young perennial plant said to be a passion flower. It was planted in a corner with a choice of tumbling over a wall, following wires and climbing a tree, or trailing on the ground; it did all three with a decided preference for trailing. About August it produced a few pinkish-violet, morning-glory blooms with a pansy-purple center, so far as I know the most decorative of the order.

"This species has been in cultivation since 1815, is from the East Indies, and probably reached the market from the Botanical Gardens in Washington, D. C., where they have some plants growing. It belongs to the group which contains the sweet potato.

"It has a large spiral root and sends out about 30 branches, each between 20 and 30 feet long. The enormous growth would make it a desirable forage plant, and as closely related species in India are used for this purpose the presumption is in its favor. The general aspect of leaves and branches is that of *Akebia quinata*. It will have to be grown from cuttings, quite an easy matter, as it roots at the leaf nodes, because it would not bear fruit out of doors north of Washington, D. C." (*Harrison.*)

Cuttings.

28914. LAPAGERIA ROSEA R. and P.**Chilean bellflower.**

From Coquimbo, Chile. Presented by Mr. Andrew Kerr, consular agent. Received October 15, 1910.

See No. 14948 for previous introduction and description.

28915 to 28917. SOLANUM spp.**Wild potato.**

Collected by Mr. J. C. Blumer, Tucson, Ariz. Received October 27, 1910.

Tubers of the following; notes by Mr. Blumer:

28915 and 28916. "Collected October 5, 1910, on the steep northeast slope of the Santa Catalina Mountains, at an elevation of 7,800 feet, under white and Douglas fir, in fine humous loam. Vines fresh, succulent, and fruiting. Slope burned clean in June."

28917. "Collected October 17, 1910, on Rincon Mountains, at Spud Ranch camp site. Since potatoes were once cultivated here these purplish tubers may be escaped from cultivation."

28918 to 28922.

From Christiania, Norway. Presented by Prof. Dr. Wille, director, Botanic Garden. Received October 24 and 25, 1910.

Seeds of the following:

28918. *MEDICAGO FALCATA* L.

28919. *MEDICAGO SATIVA* L.

Alfalfa.

Variety *malthei*. "This is a new variety which has not yet been described and which is larger and much hardier than the main variety. *Medicago sativa* is used very little in Norway for its economic importance, as it is not very hardy. A dealer in dyestuffs, O. Malthe, was very much interested in this question. He experimented and finally succeeded in discovering this variety and endeavored to disseminate it. The farmers, however, did not want to cultivate lucern because they find *Trifolium pratense* and *Phleum pratense* more profitable.

"I wish to call your attention to the fact that the seed of *M. sativa* var. *malthei* may possibly represent crosses with the closely related main variety; however, only to a limited extent. If all the seeds are planted some plants of the pure variety will likely be obtained." (Wille.)

28920. *MEDICAGO SATIVA VARIA* (Mart.) Urb.

Sand lucern.

28921. *MELILOTUS SULCATA* Desf.

Distribution.—Throughout the Mediterranean region from Portugal and the Canary Islands to Palestine, and in the oases of the Libyan Desert.

28922. *TRIGONELLA CAERULEA* (L.) Ser.

See No. 27146 for previous introduction.

28923 to 28925. ASPARAGUS spp.

Asparagus.

From Tunis, northern Africa. Presented by Mr. L. Guillochon, Jardin d'Essais de Tunis. Received October 27, 1910.

Seeds of the following:

28923. *ASPARAGUS CRISPUS* Lam.

Distribution.—In the coast region of Cape Colony in the vicinities of Hopefield, Table Mountain, Simons Bay, and in British Kaffraria.

28924. *ASPARAGUS OFFICINALIS* L.

28925. *ASPARAGUS SPRENGERI* Regel.

Distribution.—The vicinity of Port Natal in Natal, South Africa. Commonly cultivated in the United States as an ornamental house plant.

28926 to 28928.

From China. Presented by Mr. T. J. League, Tsingtau, China, who obtained them through Rev. G. E. Baker, English Baptist Mission, Tsingchowfu, Shantung, China. Received October 27, 1910.

Cuttings.

NOTE.—Three tubes were received in this shipment, although from Mr. League's letter it would appear that four different lots of material were sent. There were apparently no markings on either tubes or cuttings, so S. P. I. numbers could be assigned only to the three bundles. The notes on this material, furnished by Mr. League, appear on the following page.

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28926 to 28928—Continued.**ZIZIPHUS JUJUBA** Miller.

This being an unusual name for the common jujube, the following dates and synonyms are given to avoid confusion:

Ziziphus jujuba Miller 1768. (*Rhamnus zizyphus* L. 1753, *Z. sativa* Gaertn. 1788, *Z. vulgaris* Lam. 1789, not *Z. jujuba* (L.) Lam. 1789.) See No. 28129 for further information.

Ch'ang Hung tsao. (Long red 'date' or jujube.)

Yüan Ling tsao. (Foremost honorable 'date' or jujube.)

Hsiao tsao. (The small 'date' or jujube.)"

DIOSPYROS sp. (?)**Persimmon.**

Juan tsao. "A wild persimmon on which, as a stock, they graft the edible persimmon."

28929. ARACHIS HYPOGAEA L.**Peanut.**

From Kia-ying chau, China. Presented by Mr. George Campbell. Received November 2, 1910.

"These seem to be more drought resistant than some received from the States. The plants also have a running habit." (*Campbell.*)

28930 to 28932.

From Costa Rica. Presented by Señor don Anastasio Alfaro, secretary of the Society of Agriculture, San Jose, through Mr. Lyster H. Dewey, Botanist in Charge of Fiber-Plant Investigations. Received October 4, 1910.

Notes on the following by Mr. Dewey:

28930. AGAVE FOURCROYDES Lem.**Henequen.**

"Bulbils and suckers from plants introduced in the garden of the Museum of San Jose, Costa Rica, supposed to have come from Mexico.

"These plants appear to be the same type as those cultivated for fiber production in Yucatan.

"The fiber from the leaves of this plant is called sisal in English-speaking countries. It is used more than all other fibers combined in the manufacture of binder twine. The true sisal plant, *Agave sisalana* Perrine, is a distinct species having a wider range but not so extensively cultivated."

Distribution.—The provinces of Yucatan and Campeche in Mexico. Cultivated in Tamaulipas, Sinaloa, and Chiapas in Mexico, in Cuba, and in German East Africa.

28931. AGAVE sp.**Agave.**

"Young plants collected on the island in the Gulf of Nicoya on the Pacific coast of Costa Rica.

"These plants belong to the narrow-leaved group of the large agaves and may be useful for the production of fiber."

28932. FURCRAEA sp.**Cabuya.**

"Bulbils and young plants from the garden of the Museum of San Jose, Costa Rica. Collected by Señor don Adolfo Tonduz.

"This species belongs to the group of furcraeas that are being cultivated in Costa Rica for the production of fiber."

28933. GONOCITRUS ANGULATUS (Willd.) Kurz.

From India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden, Sibpur, Calcutta, India. Received October 31, 1910.

"This is a large shrub or small tree growing on the seashore in mangrove swamps and presumably able to endure a high degree of salinity in the soil. It is armed with ferocious spines half an inch long that usually occur in pairs at the side of the leaves. The fruit is most curious, being angled, and contains a few very large seeds embedded in a gum so sticky that Rumphius compared it to birdlime.

"The fact that this plant grows only along the seashore in mangrove swamps would lead us to believe that it possesses high powers of alkali resistance, since sea water contains over 3 per cent of dissolved salts and the mangrove and other plants growing in the mangrove swamps are able to withstand unusually large amounts of dissolved salts in the soil." (*W. T. Swingle.*)

Distribution.—In the mangrove swamps and tidal forests along the coasts from the mouths of the Ganges south of Calcutta eastward to the Molukka Islands.

28935 to 28939.

From Aintab, Turkey, Asia. Presented by Mr. H. H. Bakkalian, secretary to Mrs. F. A. Shephard. Received October 19, 1910.

Seeds of the following:

- | | |
|---|-------------------|
| 28935. CICER ARIETINUM L. | Chick-pea. |
| 28936. LATHYRUS SATIVUS L. | |
| 28937. LENS ESCULENTA Moench. | Lentil. |
| 28938. MEDICAGO FALCATA L. | |
| 28939. VICIA ERVILIA (L.) Willd. | |

28940 and 28941. MEDICAGO FALCATA L.

From Copenhagen, Denmark. Presented by Mr. Axel Lange, curator, Botanic Garden, Copenhagen University. Received October 31, 1910.

28942 to 29012.

From Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, October 18, 1910.

Seeds of the following:

- | | |
|--------------------------|--------------------------|
| 28942. PRUNUS sp. | Buckthorn almond. |
|--------------------------|--------------------------|

From Zerafshan Valley, near Sangar, Samarkand, Turkestan. "(No. 1342a, July 14, 1910.) A central Asian form of buckthorn almond, found on stony, sterile, sunburned mountain sides at elevations of 4,000 to 6,000 feet. Of possible value as a stock for almonds and peaches in dry and hot regions. Out of the bitter kernels, collected from the wild trees, the natives of Turkestan produce an oil which, after heating, can be used for culinary purposes." (*Meyer.*)

- | | |
|---|--------------------------|
| 28943. PRUNUS LYCIOIDES (Spach) Schneider. | Buckthorn almond. |
|---|--------------------------|

From Zerafshan Valley, near Wishist, Samarkand, Turkestan. "(No. 1343a, July 14, 1910.) A spiny buckthorn almond of shrubby habits growing from 3 to 8 feet in height and found on stony and rocky mountain slopes and in cliffs at elevations of 3,000 to 7,000 feet above sea level. Of possible use in breeding a bushy type of almond or as a stock for almonds and peaches in dry, hot regions. Oil is produced from the kernel of this the same as from No. 28942." (*Meyer.*)

28942 to 29012—Continued.

28944. *PRUNUS LYCOIDES* (Spach) Schneider. **Buckthorn almond.**

From Zerafshan Valley, near Wishist, Samarkand, Turkestan. "(No. 1344a, July 14, 1910.) A large-fruited variety of the preceding number, to which the same remarks apply." (*Meyer*.)

28945. *PRUNUS PROSTRATA* Labil. **Bush cherry.**

From mountains near Stood and Peki, Samarkand, Turkestan. "(No. 1345a, July 9 to 11, 1910.) A bush cherry found on stony and sterile mountain slopes and in cliffs. Grows from 1 to 8 feet tall and bears multitudes of small red cherries of a sour taste that vary much in flavor and size on different plants. This cherry apparently stands a great deal of cold and drought. After some improvement it might be made into a fruit for the home garden in the more northern sections of the United States. It may possibly be hybridized with the large-fruited sweet and sour cherries and therewith give rise to a race of bush cherries suitable for growing in the drier sections of the United States. It may also be tested as a possible dwarfing stock for cherries in dry and sterile localities." (*Meyer*.)

See also remarks under No. 1331a (S. P. I. No. 28022).

28946. *PRUNUS MICROCARPA* C. A. Meyer. **Cherry.**

From mountains near Bacharden, Turkestan. "(No. 1346a, June 5, 1910.) A wild cherry growing into a tall bush up to 10 feet high. Found between stony débris in dry river beds and on rocky mountain sides. Apparently stands great drought. Perhaps of value as a stock for cherries in stony and dry localities." (*Meyer*.)

See also remarks under Nos. 473 (S. P. I. No. 27303) and 1266a (S. P. I. No. 27337).

28947. *PRUNUS* sp. **Cherry.**

From Askabad, Turkestan. "(No. 1347a, June 9, 1910.) A small, dark-red, sour cherry, very juicy; said to come from Persia. Used stewed in compotes, and in spirits. To be tried under irrigation in the dry and hot sections of the United States." (*Meyer*.)

28948. *PRUNUS CERASIFERA DIVARICATA* (Ledeb.) Schneider. **Plum.**

From Askabad, Turkestan. "(No. 1348a, June 9, 1910.) A small sour plum, round, not larger than a marble, of green color, with red cheek, clingstone. Said to come from Persia. Used stewed in compotes and with meats. Called *Alitcha*. To be tried as a garden fruit under irrigation in the dry and hot sections of the United States." (*Meyer*.)

28949. *PRUNUS CERASIFERA DIVARICATA* (Ledeb.) Schneider. **Plum.**

From Askabad, Turkestan. "(No. 1349a, June 9, 1910.) A small sour plum of green color, larger than the preceding number, but otherwise the same remarks apply to it. Called *Alitcha*." (*Meyer*.)

NOTE.—"These plums are apparently not grafted, but are raised from seed. Although small and sour, their early-fruited capacities recommend them for hybridization work." (*Meyer*.)

28950. *PRUNUS CERASIFERA DIVARICATA* (Ledeb.) Schneider. **Plum.**

From Old Bokhara, Turkestan. "(No. 1350a, June 20, 1910.) A small, red, round plum of very sweet taste, called *Alitcha*. Used fresh like ordinary plums. Of value like preceding numbers." (*Meyer*.)

28942 to 29012—Continued.**28951. PRUNUS CERASIFERA DIVARICATA (Ledeb.) Schneider. Plum.**

From Zerafshan Valley, near Wishist, Samarkand, Turkestan. "(No. 1351a, July 14, 1910.) A wild plum found sparingly along watercourses at an elevation of about 4,500 feet; grows as a dense shrub or small tree and bears in most remarkable quantities small, round, green plums with a reddish hue. Owing to their great productiveness and their resistance to long periods of drought and heat these plums may prove valuable in hybridizing work." (*Meyer.*)

28952. PRUNUS sp.

From near Kulikalan, Samarkand, Turkestan. "(No. 1352a, July 9, 1910.) An ornamental species of *Prunus* which grows to be a small tree; it has large light-green leaves and bears long racemes of small, scarlet, oval fruits of a sweet-bitter taste. Found along a watercourse in the mountains, altitude about 6,000 feet. Of value as an ornamental park and garden tree." (*Meyer.*)

28953 to 28962. "The following numbers of apricots should be sown to obtain some superior varieties of apricots with sweet kernels which would bring a much higher price on the market than the present bitter kernels do." (*Meyer.*)

28953. PRUNUS ARMENIACA L. Apricot.

From Askabad, Turkestan. "(No. 1353a, June 9, 1910.) A small pale-yellow apricot, flesh rather hard, freestone, kernel large and sweet. Said to come from Persia." (*Meyer.*)

28954. PRUNUS ARMENIACA L. Apricot.

From Askabad, Turkestan. "(No. 1354a, June 9, 1910.) A smooth-skinned apricot of pale-yellow color; looks like a nectarine. Said to have come from Geok-tepe, Turkestan." (*Meyer.*)

28955. PRUNUS ARMENIACA L. Apricot.

From Askabad, Turkestan. "(No. 1355a, June 9, 1910.) A waxy-white variety of apricot of a very sweet and melting taste; clingstone; sweet kernel. Said to come from northern Persia." (*Meyer.*)

28956. PRUNUS ARMENIACA L. Apricot.

From Askabad, Turkestan. "(No. 1356a, June 9, 1910.) A large orange-yellow apricot of a sweet melting taste; somewhat fibrous; semi-clingstone; kernel sweet. Said to come from Persia." (*Meyer.*)

28957. PRUNUS ARMENIACA L. Apricot.

From Askabad, Turkestan. "(No. 1357a, June 9, 1910.) A yellow apricot of remarkable clingstone properties." (*Meyer.*)

28958. PRUNUS ARMENIACA L. Apricot.

From Old Bokhara, Turkestan. "(No. 1358a, June 20, 1910.) A large pale-yellow apricot of very fine aromatic taste; freestone; kernel large and sweet." (*Meyer.*)

28959. PRUNUS ARMENIACA L. Apricot.

From Samarkand, Turkestan. "(No. 1359a, July 3, 1910.) A large smooth-skinned apricot of white color with a red cheek; looks totally unlike an apricot. Flesh melting and sweet." (*Meyer.*)

28960. PRUNUS ARMENIACA L. Apricot.

From Dirdar, Zerafshan Valley, Samarkand, Turkestan. "(No. 1360a, July 13, 1910.) A large pale-yellow apricot of melting flavor; flesh firm and sweet; freestone; kernel sweet." (*Meyer.*)

28942 to 29012—Continued.**28953 to 28962—Continued.****28961. PRUNUS ARMENIACA L.****Apricot.**

From Langar, Zerafshan Valley, Samarkand, Turkestan. "(No. 1361a, July 13, 1910.) An orange-yellow apricot; flesh firm and slightly subacid; kernels sweet. Locally much used dried." (*Meyer.*)

28962. PRUNUS ARMENIACA L.**Apricot.**

From Orono, Zerafshan Valley, Samarkand, Turkestan. "(No. 1362a, July 12, 1910.) A fine variety of apricot of pale-yellow color; flesh firm but sweet and melting; kernels sweet; freestone." (*Meyer.*)

28963. AMYGDALUS PERSICA NECTARINA Ait.**Nectarine.**

From Samarkand, Turkestan. "(No. 1363a, July 4, 1910.) A small nectarine of very firm flesh and of subacid flavor; red throughout; from a distance resembles a crab apple more than anything else. Said to come from Chartchui." (*Meyer.*)

28964. CUCUMIS MELO L.**Muskmelon.**

From Merv, Turkestan. "(No. 1364a, June 13, 1910.) A muskmelon said to be very sweet and early. Obtained from a native dealer in Merv. To be tried under irrigation in the hot and dry sections of the southwestern United States." (*Meyer.*)

28965. CUCUMIS MELO L.**Muskmelon.**

From Merv, Turkestan. "(No. 1365a, June 13, 1910.) A muskmelon said to be very sweet but later than the preceding number, otherwise the same remarks apply to it." (*Meyer.*)

28966. CUCUMIS SATIVUS L.**Cucumber.**

From Askabad, Turkestan. "(No. 1366a, June 7, 1910.) A Persian variety of greenish-yellow, medium-long cucumber, said to be early." (*Meyer.*)

28967. CUCUMIS MELO L.**Muskmelon.**

From Old Bokhara, Turkestan. "(No. 1357a, June 21, 1910.) A fine variety of muskmelon, being early, of greenish-yellow color, small size, and very sweet." (*Meyer.*)

28968. CUCUMIS MELO L.**Muskmelon.**

From Askabad, Turkestan. "(No. 1368a, June 7, 1910.) A muskmelon said to be of very fine quality and very sweet. Obtained from a Persian seed dealer. To be tried like No. 1364a (S. P. I. No. 28964)." (*Meyer.*)

28969 to 28971. CITRULLUS VULGARIS Schrad.**Watermelon.**

From Tarasowka, Podolsk, Russia. "(June, 1910.) The climate of Podolsk is very temperate and as these melons seem to be something out of the ordinary they should be carefully tested in a temperate section of the United States. They were obtained, through correspondence, from a former assistant." (*Meyer.*)

28969. "(No. 1369a.) A small-seeded watermelon, having red flesh and said to be of very fine quality." (*Meyer.*)

28970. "(No. 1370a.) Like the preceding number but with white flesh." (*Meyer.*)

28971. "(No. 1371a.) Like the preceding numbers but with yellow flesh." (*Meyer.*)

28942 to 29012—Continued.

28972. *CAPPARIS SPINOSA* L.

Caper.

From near Langar, Zerafshan Valley, Samarkand, Turkestan. "(No. 1372a, July 13, 1910.) The well-known caper plant, growing on the driest of sun-burned mountain slopes and having roots that penetrate yards into the soil and between cracks in rock ledges. Roots sent from the Caucasus under No. 783 (S. P. I. No. 28126), which number see for further remarks." (*Meyer.*)

28973. *SALSOLA ARBUSCULA* Pallas.

From Chartchui, Turkestan. "(No. 1373a, June 18, 1910.) A shrub of peculiar appearance, having no leaves but instead long, slender, green, drooping branches. Is used with much success in the sand-binding and desert-reclamation work along the central Asian railroads. Recommended for the dry and hot sections of the United States for various purposes: (1) For its sand-binding properties; (2) as an ornamental park and garden shrub; (3) as a fuel supply in desert regions.

"These seeds should be sown out in the fall and kept moist until the young plants appear above ground; after that they should be watered sparingly.

"Obtained from Mr. W. A. Paletsky, in charge of sand-binding operations along the railroads in central Asia." (*Meyer.*)

28974. *CALLIGONUM CAPUT-MEDUSAE* Schrenk.

From Chartchui, Turkestan. "(No. 1374a, June 18, 1910.) A shrub of very much the same appearance as the preceding number, only flowering quite beautifully toward the end of May and early June. Strongly recommended, therefore, as an ornamental park and garden shrub in desert regions where high summer temperatures prevail, but where the mercury does not drop below zero F. See preceding number for further remarks." (*Meyer.*)

28975. *CALLIGONUM APHYLLUM* (Pall.) Guerke.

From Chartchui, Turkestan. "(No. 1375a, June 18, 1910.) A tall shrub like the preceding, but of more arborescent growth and somewhat less ornamental; otherwise all remarks made on preceding numbers apply also to this one." (*Meyer.*)

28976. *HALOXYLON AMMODENDRON* (C. A. Meyer) Bunge.

Saxaul.

From Chartchui, Turkestan. "(No. 1376a, June 18, 1910.) The famous saxaul tree, one of the chief fuel supplies of the deserts and oases in central Asia. The wood, which is exceedingly heavy and compact, retails at 20 to 25 kopecks a pood (40 pounds). For possible uses and cultural remarks see preceding numbers; see also remarks under No. 1303a (S. P. I. No. 27802)." (*Meyer.*)

28977. *CAREX PHYSODES* Bieb.

From Chartchui, Turkestan. "(No. 1377a, June 18, 1910.) A rare species of sedge, native of the desert, used in sand-binding work along the central Asian railroads. To be tested for similar purposes in the arid sections of the southwestern United States; also, as a possible lawn sedge in the same regions. Obtained like the preceding numbers." (*Meyer.*)

28978. *ROSA XANTHINA* Lindl.

Rose.

From near Kulikalan, Samarkand, Turkestan. "(No. 1378a, July 10, 1910.) A very spiny, shrubby rose, bearing in early summer an abundance of small, deep butter-yellow roses. Found on stony, sterile mountain slopes and in ravines at altitudes of 6,000 to 9,000 feet. Recommended for hybridization work to create perfectly hardy yellow roses and as an ornamental garden shrub for the northern United States." (*Meyer.*)

28942 to 29012—Continued.

28979. *ROSA XANTHINA* Lindl.

Rose.

From near Pasroute, Samarkand, Turkestan. "(No. 1379a, July 11, 1910.) Apparently the same as the preceding, but no flowers could be found. Collected at 6,000 feet elevation." (*Meyer.*)

28980. *BERBERIS* sp.

Barberry.

From near Kulikalan, Samarkand, Turkestan. "(No. 1380a, July 10, 1910.) A tall-growing ornamental barberry found at elevations from 5,000 to 10,000 feet, often on quite sterile places. Bears multitudes of large racemes of yellow flowers. Recommended as an ornamental park and garden shrub in the northern sections of the United States.

"These are last year's seeds and were collected from old bushes at an altitude of about 10,000 feet. In these regions the snow disappears by about the 15th of May, but returns again the last days of September." (*Meyer.*)

28981. *LONICERA* sp.

Honeysuckle.

From near Kulikalan, Samarkand, Turkestan. "(No. 1381a, July 10, 1910.) A tall bushy honeysuckle growing on dry and rocky places, preferably between boulders. Found at an altitude of about 6,000 feet above sea level. Bears yellow berries. Of value apparently as a park and garden shrub in the northern sections of the United States." (*Meyer.*)

28982. *LONICERA* sp.

Honeysuckle.

From near Kulikalan, Samarkand, Turkestan. "(No. 1382a, July 10, 1910.) A tall bushy honeysuckle sometimes growing into a tree. Bears red berries. Found on dry and rocky places at elevations of 5,000 to 8,000 feet. Recommended like the preceding number." (*Meyer.*)

28983. *COLUTEA* sp.

From Zerafshan Valley, near Wishist, Samarkand, Turkestan. "(No. 1383a, July 14, 1910.) A *Colutea* found on very dry and rocky mountain slopes; bears yellow flowers and a multitude of large inflated pods. Of value as an ornamental garden and park shrub in the dry sections of the United States." (*Meyer.*)

28984. *COLUTEA* sp.

From near Bacharden, Turkestan. "(No. 1384a, June 4, 1910.) A *Colutea* found amidst stony debris and rocks on arid places. Of value like the preceding number." (*Meyer.*)

28985. *ACACIA* sp.

From desert near Merv, Turkestan. "(No. 1385a, June 14, 1910.) A spiny weed growing here and there in large quantities in the desert. The pods seem to possess tanning capacities and should be tested for these qualities. If found to be possessed of sufficient tannin, this plant could be grown commercially in large sections of the southwestern United States." (*Meyer.*)

28986. *MEDICAGO MINIMA* (L.) Grufb.

From Baku, Caucasus, Russia, "(No. 1386a, May 26, 1910.) A bur clover growing here and there on very dry hill slopes. Recommended as a winter herbage for cattle in the moist mild-winter sections of the United States." (*Meyer.*)

28987. *TRIGONELLA* sp.

From near Pasroute, Samarkand, Turkestan. "(No. 1387a, July 11, 1910.) Found along the edge of a wheat field at about 6,000 feet altitude. Of possible value as a fodder herb or as green manure in the mountainous sections of the United States." (*Meyer.*)

28942 to 29012—Continued.

28988. *GLAUCIUM* sp.

From near Bacharden, Turkestan. "(No. 1388a, June 5, 1910.) A wild plant with yellow red-spotted flowers. Of possible value as an ornamental garden annual." (*Meyer.*)

28989. *DATURA STRAMONIUM* L.

Jamestown weed.

From Langar, Zerafshan Valley, Samarkand, Turkestan. "(No. 1389a, July 13, 1910.) The seeds of this plant are locally used by the Sart population as a remedy against headache, the seeds being heated in oil and pounded together with it into a pulp; this is then applied to the temples and is said to be very efficient." (*Meyer.*)

28990. *PAPAYER SOMNIFERUM* L.

Poppy.

From Pendshikent, Samarkand, Turkestan. "(No. 1390a, July 7, 1910.) A pure-white variety of poppy seed, grown locally and used baked on cakes and in pastry; also expressed for the sweet, clear oil it contains, which is used for culinary purposes." (*Meyer.*)

28991. *PAPAYER SOMNIFERUM* L.

Poppy.

From Old Bokhara, Turkestan. "(No. 1391a, June 22, 1910.) A white variety of opium poppy used for the same purpose as the preceding number." (*Meyer.*)

28992. *PHASEOLUS RADIATUS* L.

From Kizil-Arvat, Turkestan. "(No. 1329a, June 2, 1910.) The ordinary gram or mung bean, used by the population in central Asia as a food; boiled in soups, eaten boiled with rice, or ground into flour; mixed with flour of various cereals and baked into small hard cakes. This number is said to have been imported from Persia." (*Meyer.*)

28993. *PHASEOLUS RADIATUS* L.

From Old Bokhara, Turkestan. "(No. 1393a, June 22, 1910.) A rare local variety of mung bean with yellow seeds; used boiled in soups." (*Meyer.*)

28994. *VIGNA UNGUICULATA* (L.) Walp.

Cowpea.

From Old Bokhara, Turkestan. "(No. 1394a, June 22, 1910.) A very large local variety of cowpea, used in soups and stews. To be tried under irrigation in the hot and dry sections of the southwest United States." (*Meyer.*)

28995. *ANDROPOGON SORGHUM* (L.) Brot.

Durra.

From Merv, Turkestan. "(No. 1395a, June 13, 1910.) A good quality of djugara used by the native population for making flat loaves; also eaten boiled as a gruel. To be tried under slight irrigation in the hot and dry sections of the United States." (*Meyer.*)

28996. *ANDROPOGON SORGHUM* (L.) Brot.

Durra.

From Old Samarkand, Turkestan. "(No. 1396a, June 30, 1910.) A good quality of local djugara used like the preceding number." (*Meyer.*)

"These represent the common djugara of Turkestan, a white durra differing from the ordinary form found in northern Africa and grown in the United States for many years in having a taller, heavier stalk and more compact heads, nearly all of them pendent. It has been introduced several times before." (*Carleton R. Ball.*)

28997. *PANICUM MILIACEUM* L.

Proso.

From Old Samarkand, Turkestan. "(No. 1397a, June 30, 1910.) A large white-seeded local variety of proso, grown by the Sart population in the oasis of Samarkand. To be tested like preceding numbers." (*Meyer.*)

28942 to 29012—Continued.

28998. *PANICUM MILIACEUM* L.

Proso.

From Old Samarkand, Turkestan. "(No. 1398a, June 30, 1910.) A large whitish-seeded variety of proso. Other remarks on preceding number apply also to this." (Meyer.)

28999. *PANICUM MILIACEUM* L.

Proso.

From Old Samarkand, Turkestan. "(No. 1399a, June 30, 1910.) A large yellow-seeded variety of proso. To be tested like preceding numbers." (Meyer.)

29000. *CHAETOCCHLOA ITALICA* (L.) Scribn.

Italian millet.

From Old Samarkand, Turkestan. "(No. 1400a, June 30, 1910.) A white variety of millet." (Meyer.)

29001. *CHAETOCCHLOA ITALICA* (L.) Scribn.

Siberian millet.

From Old Samarkand, Turkestan. "(No. 1401a, June 30, 1910.) A red variety of millet.

"The remarks made on preceding numbers apply also to these." (Meyer.)

29002. *ECHINOCHLOA FRUMENTACEA* (Roxb.) Link.

From Old Samarkand, Turkestan. "(No. 1402a, June 30, 1910.) A local variety of Japanese millet, used as food by the poorest classes. This seed was sifted out of some rice seed and is apparently a weed." (Meyer.)

29003. *HORDEUM VULGARE* L.

Barley.

From Merv, Turkestan. "(No. 1403a, June 13, 1910.) Winter barley grown with slight irrigation in the oasis of Merv. To be tested under irrigation in the dry and hot sections of the United States." (Meyer.)

29004. *HORDEUM VULGARE* L.

Barley.

From Merv, Turkestan. "(No. 1404a, June 13, 1910.) Summer barley grown under irrigation in the oasis of Merv. To be tried like the preceding number.

"Barley, in central Asia, takes the same place that oats do with us and is fed everywhere to cart and riding horses, which apparently relish the food." (Meyer.)

29005. *TRITICUM DURUM* Desf.

Wheat.

From Old Samarkand, Turkestan. "(No. 1405a, July 3, 1910.) A fine variety of winter wheat grown without irrigation in the oasis of Samarkand. Very much in favor with the people for bread making; apparently rich in gluten. To be tried in the drier sections of the United States." (Meyer.)

29006. *TRITICUM* sp.

Wheat.

From Old Samarkand, Turkestan. "(No. 1406a, July 3, 1910.) A fine local variety of soft white wheat." (Meyer.)

29007. *TRITICUM* sp.

Wheat.

From Old Samarkand, Turkestan. "(No. 1407a, July 3, 1910.) A good local variety of hard white wheat.

"The two preceding numbers should be tested like No. 1405a (S. P. I. No. 29005)." (Meyer.)

29008. *TRITICUM AESTIVUM* L.

Wheat.

From Pendshikent, Samarkand, Turkestan. "(No. 1408a, July 7, 1910.) A local variety of dark winter wheat grown on the mountain slopes without irrigation. To be tested in the semiarid sections of the United States." (Meyer.)

28942 to 29012—Continued.

29009. TRITICUM sp.

Wheat.

From Pendshikent, Samarkand, Turkestan. "(No. 1409a, July 7, 1910.) A good local variety of hard winter wheat grown on the plains under irrigation." (Meyer.)

29010. TRITICUM sp.

Wheat.

From Merv, Turkestan. "(No. 1410a, June 13, 1910.) A good local variety of winter wheat grown under irrigation in the oasis of Merv." (Meyer.)

29011. TRITICUM sp.

Wheat.

From Old Bokhara, Turkestan. "(No. 1411a, June 22, 1910.) A fine variety of wheat said to come from Katti-Kurgan, Turkestan, which place is known for its good wheat.

"The husks of the Turkestan wheats seem to adhere very firmly to the seed, so that even when left in the field for months the grains do not fall out." (Meyer.)

29012. TRIFOLIUM sp.

From Kazelkovskaia, near Merv, Turkestan. "(No. 1412a, June 14, 1910.) A creeping species of white clover found along irrigation canals and on low places in the desert. Of possible value as a lawn clover, under slight irrigation, in the desert regions of the United States." (Meyer.)

29013. INGA EDULIS Mart.

"Ingá cipó."

From Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received November 4, 1910.

"This is a somewhat choicer variety than the one (S. P. I. No. 27798) which I previously transmitted." (Fischer.)

29014. VIGNA UNGUICULATA (L.) Walp.

Cowpea.

From Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received November 4, 1910.

"A variety of cowpea known here as *feijão manteiga* (my Macassar No. 2)." (Fischer.)

29015. ALHAGI MAURORUM Medic.

From Cairo, Egypt. Presented by Mr. Abdel Hamid Abaza, secretary general, Khedivial Agricultural Society. Received November 4, 1910.

"A thorny leguminous plant which yields the so-called *Alhagi-manna* or *terend-jebin*. This is a sweet gummy substance which during the heat of the day exudes from the leaves and stems and hardens. It is collected by the Arabs and used as a sugar substitute, and as an ingredient for certain sweetmeats. It is a desert plant, growing spontaneously in South Africa, Egypt, Arabia, Asia Minor, and central India. It is imported into India from Kabul and Kandahar in considerable quantities, and has been valued at 30 shillings per pound. I do not think the plant suitable for southern Florida. If introduced it should be tried in our arid southwestern regions. In the hottest part of the year, when almost all other vegetation is shriveled up, it puts forth its leaves and flowers, which are fed to camels; hence it is sometimes called camel's thorn. In some places no manna is obtained from the plant; in no place is much obtained from a single plant. The gummy-looking substance is shaken off. It occurs in grains varying from the size of a mustard seed to that of a hemp seed, and is of a light-brown color and an agreeable saccharine sennalike smell. This substance if unprotected is probably attacked by weevils or other insects; hence it is said to breed worms." (W. E. Safford.)

29016. OSTERDAMIA MATRELLA (L.) Kuntze.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received November 5, 1910.

A valuable lawn grass.

Distribution.—Sandy shores of tropical Asia from India eastward through China and Japan to Australia.

29017 to 29019.

From Kuling, China. Presented by Mrs. John Berkin. Received November 5, 1910.

Seeds of the following:

29017. ACTINIDIA CHINENSIS Planch.

Yangtaw.

"With regard to the yangtaw, the natives say they think all vines grow fruit, but a young vine never bears. They are usually 6 to 8 years old before they bear. So possibly these vines in time will produce fruit." (*Berkin.*)

See No. 21781 for further description.

29018. PRUNUS sp.

Wild cherry.

29019. VITIS sp.

Wild grape.

29020 and 29021.

From Mauritius. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received November 4, 1910.

Seeds of the following:

29020. ELAEODENDRON ORIENTALE Jacq.

"*Bois d'olive.* A shrub 10 to 30 feet high, glabrous. Flowers in cymes one-fourth of an inch across. Drupe oblong, the size of a large Spanish olive; edible; seed two celled. Found in Mauritius, Rodriguez, and Madagascar." (*Regnard.*)

29021. VANGUERIA MADAGASCARIENSIS Gmelin.

"*Vavangue.* A glabrous shrub 10 to 15 feet high, with very large and long leaves; flowers in copious peduncles, greenish yellow, and having an awful odor. Globose drupe $1\frac{1}{2}$ inches thick with five large bony stones. The fruit is eaten only when quite ripe and of a light-brown color; the pulp is brown with a sweet acid flavor. Naturalized over Mauritius and the Indian Ocean islands." (*Regnard.*)

29022 and 29023. IRIS TENAX Dougl.

Iris.

From Oregon. Presented by Mr. George R. Schoch, Forest Grove, Oreg. Received November 10, 1910.

Seeds of the following; notes by Mr. Schoch:

29022. "Flowers purple, penciled with yellow. Height of flower stems 6 to 12 inches."

29023. "Variety *alba*. Height of flower stems 6 to 8 inches."

"These bloom for about 30 days annually. They should develop attractive flag or carpet effects in extensive grounds, lawns, or parks. The herbage should not be mown, save once in the autumn. The seeds should be forced, as they germinate reluctantly.

"This plant endures the severest droughts; besides, it remains green when not subjected to severe freezes. It should find friends and admirers south of Tennessee."

29025. IRVINGIA GABONENSIS (Aubry-Lecomte) Baill. Oba.

From Botnaga, Kamerun, western Africa. Presented by Mr. Fred H. Hope.
Received November 17, 1910.

See No. 28912 for description.

29026. TRITICUM DIOCCUM DIOCCOIDES (Koern.) Asch. and Graebn. Wild wheat.

From Palestine. Presented by Mr. Aaron Aaronsohn, director, Jewish Agricultural Experiment Station, Haifa, Palestine. Received November 3, 1910.

See Bulletin No. 180, Bureau of Plant Industry, for description.

NOTE.—“I believe that you will do well to sow a part of this as winter wheat in the Southwest. The wild wheat sown at Bonn, Germany, last October survived the winter perfectly, as I could see for myself last May when I visited there.” (*Aaronsohn.*)

29027. PASSIFLORA LIGULARIS Juss. Passion flower.

From near Ambato, Ecuador. Presented by Mr. Herman R. Dietrich, American consul general, Guayaquil. Received November 14, 1910.

“This granadilla fruit was grown a short distance from Ambato, Ecuador. It is frequently shipped to Guayaquil, where it is sold to consumers at about 3½ cents apiece, Ecuadorian currency.” (*Dietrich.*)

29028 to 29030. GOSSYPIUM spp. Cotton.

From Marash, Turkey. Presented by Mr. Paul N. Nersessian. Received November 9, 1910.

Seeds of the following; notes by Mr. Nersessian:

29028. GOSSYPIUM HERBACEUM L.

“This branches out more and grows larger than No. 29030, the bolls are larger, and the lint cotton from a given weight of bolls is much more, but the yield of bolls from a given area is much less in this locality than the aforementioned variety. It may yield more bolls in another locality, or the cause of the short yield may be found and remedied; then of course it will be the best of all. This variety we call *Besny* or *Gaga*.”

29029. GOSSYPIUM HIRSUTUM L.

“This variety we call *Constantinople*. It grows larger, branches out more like a tree, requires richer land, is sown about two weeks earlier, and matures earlier. It requires more water for irrigating than the others. The bolls open wide apart and shed out the lint cotton if not picked in-time.”

29030. GOSSYPIUM HERBACEUM L.**29031 to 29033.**

From eastern Bengal and Assam, India. Presented by Mr. R. L. Proudlock, arboricultural expert. Received November 19, 1910.

Seeds of the following:

29031. CASSIA MIMOSOIDES L.

“A leguminous plant which is splendid for covering ground and yet easy to root out. It does well in a moist tropical climate and will in my opinion be first-rate for keeping down weeds on rubber plantations.” (*Proudlock.*)

Distribution.—India, extending from the Himalayas, where it grows at an altitude of 6,000 feet, southward to Ceylon; generally naturalized in the Tropics.

29031 to 29033—Continued.

29032. *DIOSPYROS PEREGRINA* (Gaertn.) Guerk. (?) **Persimmon.**

29033. *DIOSPYROS* sp. **Persimmon.**

"These two species are grown in this district (Dacca) for their edible fruit. The fruits are rather astringent unless they are allowed to become almost dead ripe before they are eaten." (*Proudlock.*)

29034 to 29041. PHORMIUM TENAX Forst. New Zealand flax.

From Wellington, New Zealand. Presented by Mr. T. W. Kirk, director, Department of Agriculture. Received September 8, 1910. Numbered November 21, 1910.

Plants of the following varieties:

29034. *Arerowharawhara* from Taupo.

29038. *Oue.*

29035. *Awanga.*

29039. *Paretaniwha.*

29036. *Katiraukawa.*

29040. *Putaiore.*

29037. *Korokihī.*

29041. *Tihore.*

29042. ARGANIA SPINOSA (L.) Skeels.

Argan.

From Safi, Morocco. Procured by Mr. R. L. Sprague, American consul, Gibraltar, Spain. Received November 21, 1910.

See No. 28783 for previous introductions.

29043. COFFEA MACROCARPA Rich.

Coffee.

From the island of Mauritius. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received November 21 and 23, 1910.

"A small and very rare shrub of Mauritius, which grows on a soil rather poor, but wet." (*Regnard.*)

Distribution.—In the woods on the slopes of the Pouce and Savanne mountain ranges in the island of Mauritius.

29044. CITRUS sp.

Orange.

From Olokemeji, Western Province, Southern Nigeria. Presented by Mr. A. Harold Unwin, provincial forest officer. Received November 22, 1910.

"An orange, the skin of which remains green even after the fruit ripens." (*R. L. Beard, Winston Salem, N. C.*)

29045. (Undetermined.)

From Botnaga, Kamerun, western Africa. Presented by Mr. Fred H. Hope. Received November 18, 1910.

"*Mvut*, native name. These seeds are from a tree that grows 30 to 40 feet high and has a rough bark. The fruit is about 1 inch in diameter and 2 inches long. It grows in clusters like the grape and has a fuzz like the peach. The cluster grows out from the trunk of the tree and very often low. Generally found to do best in deep forests." (*Hope.*)

29046. ACACIA GIRAFFAE Willd.

From South Africa. Presented by Prof. J. Burt Davy, agriculturist and botanist, Department of Agriculture, Pretoria, Transvaal, South Africa. Received November 23, 1910.

"Seeds of the *kameel-doorn*. This is named after the camelopard, or giraffe, which is said to browse on the foliage; the Dutch word for giraffe is *kameel*. This tree used to be plentiful about Kimberley, but it has been largely destroyed for fuel. The wood is hard and heavy and the heartwood dark brown-red in color; Burchell (Travels) states that the Bechuanas used it for spoons, knife handles, etc. By white people

it is chiefly used for fuel, as much as 10,000 tons of fuel, mostly of this species, having been taken to Vryburg alone during some years. Kimberley has also been responsible for the destruction of large quantities. In the early days of mining in Kimberley, when the kameel-doorn was plentiful in the vicinity, the hard heartwood, well oiled, was used as a support for machinery shafts. It is stated by Mr. Senator Marks, one of the old residents of Kimberley, that kameel-doorn, when well oiled, outlasted brass fittings for this purpose.

"This tree grows in a warm, dry, sandy country, with a minimum rainfall of about 15 to 20 inches and a dry winter; its growth is said to be very slow." (*Davy.*)

Distribution.—Dry and sandy deserts in the vicinity of Kimberley, Cape Colony, and northward to Bechuanaland.

29047. OLEA VERRUCOSA (R. and S.) Link. Wild olive.

From South Africa. Presented by Prof. J. Burtt Davy, government agrostologist and botanist, Department of Agriculture, Pretoria, Transvaal, South Africa. Received October 31, 1910.

See Nos. 25520 and 25521 for previous introduction and description.

29048. PASSIFLORA LIGULARIS Juss. Passion flower.

From Bolivia. Presented by Mr. Alexander Benson, chargé d'affaires ad interim, La Paz, Bolivia. Received November 22, 1910.

"These granadillas were purchased in the open market. As you doubtless are aware, La Paz is surrounded by desert, barren country, and all fruits which are brought to the market are brought in on the backs of donkeys from the Yungas country." (*Benson.*)

29049. SOLANUM sp. Potato.

Collected on the Morro Solar Mountain near Chorillos, near Lima, at about 200 meters altitude, among the rocks of a talus slope. Presented by Dr. A. Weberbauer, German legation, Lima, Peru. Received November 23, 1910.

"The plant from which these tubers were procured is closely related to *Solanum maglia*, differing from it, however, in that the flowers are not uniformly violet, but often bear violet stripes on a white ground." (*Weberbauer.*)

29050. PYRUS sp. Pear.

From Manchuria. Purchased from Mr. Edward C. Parker, agriculturist, Bureau of Agriculture, Industry, and Commerce, Mukden, Manchuria. Received November 25, 1910.

"Mixed varieties. Native habitat, Kwangning district, Manchuria, 42° N. lat. These varieties are very resistant to drying winds, sun scald, blight, etc. Valuable in America as hardy grafting stocks." (*Parker.*)

29051 and 29052.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, October 18, 1910.

Seeds of the following:

29051. MEDICAGO RIGIDULA MORISIANA (Jord.) Rouy and Fouc. Bur clover.

From near Petrovsk, Daghestan, Caucasus, Russia. "(May 15, 1910.) A small annual bur clover found on level, sandy ground, also on stony slopes along the road. Of small growth. May be of value as a winter-forage plant in regions where the winters are mild and moist, or as a summer-forage plant in the cooler sections of the United States, notably in mountainous regions." (*Meyer.*)

Distribution.—Originally found in the islands of Corsica and Sardinia; apparently occurring with the species throughout southern Europe from Spain to Greece; in Asia Minor, Syria, and Persia; and in Egypt, Algeria, and Morocco.

29051 to 29052—Continued.

29052. *PINUS LARICIO PALLASIANA* (Lamb.) Endl.

Pine.

From near Kirikinesh, Crimea, Russia. "(January 16, 1910.) A pine found growing wild along the coasts of the Crimea, occurring sometimes in the rockiest of situations where one would not believe a pine tree would grow. Of value as an ornamental park tree in regions where the winters are not too severe, but the summers hot and dry. Said to be used in reclaiming moving sand wastes in southern Russia." (*Meyer.*)

Distribution.—On the slopes of the mountains in the Crimean Peninsula and the adjacent shores of the Black Sea.

29054 to 29077. *MUSA* spp.

Banana.

From Paramaribo, Surinam, South America. Presented by Mr. Goldsmith H. Williams, manager, United Fruit Co. Received November 19, 1910.

Suckers of the following; notes by Mr. Williams:

29054. Apple banana. From Surinam.

29055. Apple banana, large. From Demerara.

29056. Apple banana, large, extra acid. From Demerara.

29057. Apple banana, very long bunches, sweet. From Demerara.

29058. *Braka Bana*, a sort of cross between a plantain and banana. From Surinam.

29059. Fig, or lady's-finger, extra long bunches, usually 10 hands. From Demerara.

29060. Fig, *King of the Prawn*, tasteless but handsome. From New York Botanic Garden.29061. Fig, *Soekroe*, very small fig banana, but quite sweet. From Surinam.

29062. Horse banana. From Demerara.

29063. Horse banana, *Camboure*, pink fleshed. From Oyapok River, French Guiana.29064. *Lindo*, tree exactly like the Jamaica banana, but the fruit is not so sweet and resembles slightly a plantain in appearance and flavor. From Costa Rica.29065. *Martaban Calcutta*, very much like the *Bumulan* from Manila. From Surinam.

29066. Plantain, common. From Surinam.

29067. *Palem Bang*, Malay Archipelago; small fingers, but has a good flavor.29068. *Pisang Radja*, Siam. From Java.29069. *Pisang Radja*. From Java.

NOTE.—There is some question as to whether or not this is *Pisang Radja*, as a mistake was made in labeling it.

29070. Plantain, *Vittata*, St. Thomas Island, West Africa.

29071. Red, medium size; light shade of red. From Demerara.

29072. *Uraba*. From Gulf of Darien.29073. *Uraba* No. 2. From Windward Islands.

29074 to 29077.

NOTE.—These numbers were put on the plants from which the labels had become detached en route. They can not be identified until grown.

29078 to 29081.

From Addis Abeba, Abyssinia. Presented by Mr. Guy R. Love, American vice consul general. Received November 23, 1910.

Seeds of the following:

29078 and 29079.	CICER ARIETINUM L.	Chick-pea.
29078.	Brown seeded.	29079. Black seeded.
29080.	PISUM ARVENSE L.	Field pea.
29081.	PISUM SATIVUM L.	Field pea.

29082 to 29086.

From Lyngby, Denmark. Presented by Mr. E. Lindhard, Experiment Station for Plant Culture, Tystofte Pr. Tjaereby, Denmark, who procured them from Mr. K. Hansen at Lyngby Experiment Station. Received November 26, 1910.

Seeds of the following; quoted notes by Mr. Lindhard:

29082 to 29084.	PISUM ARVENSE L.	Field pea.
29082.	"Marbled winter variety."	
29083.	"Spotted winter variety."	
29084.	"Tawny winter variety."	
"Winter varieties of the field pea are cultivated only on very limited areas in this country."		
29085 and 29086.	VICIA SATIVA L.	Common vetch.
29085.	"Brown."	29086. "Gray."
"Fall field vetches."		

29087 and 29088.

From Gonda, United Provinces, India. Presented by Rev. N. L. Rockey, district superintendent of the missions of the Methodist Episcopal Church. Received November 23, 1910.

Seeds of the following:

29087.	ANONA RETICULATA L.	Custard-apple.
29088.	CITRUS DECUMANA (L.) Murr.	Pomelo.

29089. BOEHMERIA NIVEA (L.) Gaud.**Ramie.**

From Chekiang, China. Presented by Mr. R. J. Felgate, Mokanshan, China. Received November 26, 1910.

"This sample grew wild in a garden close by my house." (*Felgate.*)

29090. PASSIFLORA LIGULARIS Juss.**Passion flower.**

From Acapulco, Mexico. Presented by Mr. Marion Letcher, American consul. Received November 29, 1910.

"This fruit is sold in season in this market, but is not grown in this immediate locality, being brought from the mountain section of the State. As to the quality of the fruit, I have to say that in my opinion it is inferior in flavor to its congener (may-pop) of the cotton fields of the Southern States. The Mexican fruit has the advantage in size and in having smaller seeds. The local name for the fruit is *granada china*. I should judge from the name that it was introduced from China in the earlier days and is not an indigenous fruit, as supposed." (*Letcher.*)

29091. NICOTIANA TABACUM L.**Tobacco.**

Grown on the Santa Maria plantation, 12 miles east of the city of Pinar del Rio, and in the Vuelta Abajo, Cuba. Presented by Mr. H. H. Norton, Consolacion del Sur, Cuba. Received November 28, 1910.

"I believe there is only one variety of tobacco grown in Cuba and that the different types are the results of different soils, climate, and methods of cultivation and curing." (Norton.)

29092 and 29093. NICOTIANA TABACUM L.**Tobacco.**

From Cuba. Presented by Mr. Francisco A. Montero, Santa Clara, Cuba. Received November 28, 1910.

Seeds of the following:

29092. Remedios. From the district surrounding the town of this name in the province of Santa Clara.

29093. Yara. From the district in the vicinity of the town of this name in the province of Oriente, 16 miles east-southeast of Manzanillo.

29094 to 29096.

From Orleans, France. Presented by Léon Chenault & Son, nurserymen. Received November 29, 1910.

Plants of the following:

29094. CARRIEREA CALYCINA Franch.

"A deciduous tree 20 to 30 feet (sometimes 40 feet) high with a wide-spreading head of branches." (*Kew Bulletin*, No. 9, 1909.)

Distribution.—Slopes of the mountains in the northeastern part of the province of Szechwan, China, at an elevation of about 4,500 feet.

29095. TETRACENTRON SINENSE Oliv.

"According to Mr. E. H. Wilson this is among the very largest of the broad-leaved trees of the Chinese forests (that is, excluding conifers). It is often 80 feet high and upward, with a trunk 20 feet in circumference. It bears small yellowish flowers in slender spikes about 4 inches long." (*Kew Bulletin*, No. 9, 1909.)

Distribution.—The districts of Chienshih and Fang in the province of Hupeh, central China.

29096. ROSA GIGANTEA × (?).

Rose.

"*Étoile du Portugal*, the new hybrid of *Rosa gigantea*. As this variety has not yet proved to be quite hardy it would be preferable to plant it in a cool greenhouse or in a conservatory, where it would grow beautifully." (Chenault.)

29097. ILEX PARAGUARIENSIS St. Hil.**Yerba maté.**

Grown near the boundary line of Brazil and Paraguay. Presented by Mr. C. F. Mead, Cahi Puente, Paraguay. Received November 30, 1910.

"This plant is known here as *yerba*, and the forests where it is found are called *yerbales*. There are many varieties hereabout, but I was lucky enough to be able to purchase seed of the best kind. I am sending the entire fruit. To get out the seed it must be soaked for 24 hours in warm water at about 45° C., or better still put in an incubator where a steady temperature can be maintained. There are five or six seeds to each fruit. The seed when planted will take three months to germinate, but if the

whole fruit is planted, three years are necessary. Plant in the nursery first; then transplant, spacing 10 feet apart for square method. When full grown the tree is from 30 to 40 feet high. The yerba is the leaf, cut and prepared about once every three years if you own the tree, once every two years if you rent the yerbal. The extra year acts the same on the life of the tree as proper or improper pruning does on fruit trees. The general method here is to rent two or three yerbaes and harvest one each year, the picking season of Paraguay being from June 15 to the end of August.

"As near as I can find out, the method of preparing for market is to pick the leaves, partly dry by a fire, finish drying in the sun, and then break up fine with a kind of flail, when it is ready to sack and market. The flavor of yerba is regulated by variety; the strength, by years of growth and methods of preparation. The yield of yerba is about 3 kilos per tree when three years old, 6 kilos per tree the second crop, and a gradual increase then until full grown, when you can cut 80 to 100 kilos (this is probably incorrect as most authorities agree that only 25 to 35 kilos can be cut every three years).

"Maté, or, yerba takes the place of tea and coffee south of Brazil, and its use is being widely extended. There are already companies in Britain for exploiting it, and the export to Mediterranean countries has attained some volume. It has the general reputation of being far less injurious than tea or coffee. When used constantly, however, you have the same craving as with the others, and the majority even go so far as to endow the use of yerba, especially 'amargo' (without sugar), with medicinal qualities, though experiments carried on in Buenos Aires go to prove that such claims are greatly exaggerated, and the 'cup of maté was not so good for Mary Anne' as the Buenos Aires Standard expressed it.

"Yerba is the name of the herb, but the tea is always spoken of as maté. Maté cocido is boiled yerba; this taken the same way as tea or coffee in cups is the 'gringo' style. For peons, a tin cup of maté and six small biscuits keep their speck of life until noontime. The general method of serving, however, is with maté and bombilla, the word 'maté' here meaning the small gourd used to hold yerba and the 'bombilla' the thin tube through which maté is sucked. The maté is about the size of a small cup. The yerba is placed inside and the resultant tea sucked out through the bombilla. The use of sugar is optional. On emptying the maté cup hot water is poured in again and it is passed to the next member of the ring around the fire; a very unsatisfactory and unsanitary method, to say the least, but the only way according to the natives, even though it is necessary to repeat the operation for about two hours to get enough. Maté cocido would be the only method for white people. Yerba sells in Buenos Aires for \$1.15 in silver (about 50 cents in gold) per kilo." (Mead.)

See No. 25529 for previous introduction.

29098. *POPULUS TREMULA* L.

Poplar.

From Tiflis, Caucasus, Russia. Presented by the Tiflis Botanic Garden. Received December 5, 1910.

"The wood of this tree is used almost exclusively in the match industry of Sweden. Undoubtedly the other species of *Populus*, i. e., *P. alba* and *P. canescens*, could be used to advantage for the same purpose but for the fact that the latter are not so abundant as *P. tremula*. *P. tremula* does not appear to have been noticed by botanists in America, although it is frequently found planted in our parks. It is readily recognized by its large dark-brown buds, 1 centimeter long and half as wide. These are rather blunt and not pointed, as in the case of the Lombardy and Carolina poplars. *P. tremula* was in all probability introduced into Maryland by the early settlers, as it and other species are frequently found about the old mansions." (Extract from letter of Mr. I. Tidestrom, of the Bureau of Plant Industry, September 17, 1910.)

29099. STIZOLOBIUM ATERRIMUM Piper and Tracy. **Mauritius or Bengal bean.**

From the State of Minas Geraes, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received November 26, 1910.

See No. 28906 for description.

29100. MELINIS MINUTIFLORA Beauv.

From Brazil. Presented by Dr. Orville A. Derby, Serviço Geológico e Mineralógico do Brazil, Rio de Janeiro, Brazil. Received December 2, 1910.

"The species of grass named *Panicum melinis* (*Melinis minutiflora*) occurs in at least two distinct varieties: *Capim catingueiro roxo* and *Catingueiro claro*. The *Melinis minutiflora* is certainly but a synonym of the *Panicum melinis* and no distinct species. A variety has been found at Petropolis, but as I had no opportunity to see this variety, I think it is an adaptation to the different conditions of humidity in the mountains." (Alberto Löfgren, director, Botanic Garden, Sao Paulo, Brazil.)

29101 to 29105.

From China. Presented by Mr. T. M. Wilkinson, Foochow, China. Received November 28, 1910.

Seeds of the following; notes by Mr. Wilkinson:

29101. CITRUS DECUMANA (L.) Murr.

Pomelo.

"This tree grows 200 miles north of Foochow. It is much like the orange, but coarser. The fruit weighs from 2 to 3 pounds; the casings of the pulp are very bitter; the skin is very thick in the large fruits, nearly half an inch. All casing and rind must be carefully removed before eating. It is semitart and of fine flavor. Grows on any good land. Season, September 15 to April."

29102. DIOSPYROS KAKI L. f.

Persimmon.

"I am told that this tree grows as far north as Shanghai. The fruits are large, many of them being 2 inches in diameter; skin and pulp red; sweet and fine flavored. Grows from valley to mountain side."

29103. CRATAEGUS PINNATIFIDA Bunge.

Hawthorn.

"*San cha*. In habit this fruit tree is very much like the American thorn-apple or hawthorn, but the fruit is much larger, being 1 to 1½ inches in diameter. It is semitart and makes delicious sauce and preserves."

29104. (Undetermined.)

"Yellow bullet. This tree in habit and appearance is like litchi and linging. The fruit is russet in color, with skin like a grape and a translucent, semitart pulp. Season, August 10 to September 20."

29105. (Undetermined.)

"A doctor who lives 200 miles in the interior gave me the fruit this seed came from and said it seemed to grow wild. In appearance it was very much like a pawpaw, but the flavor was semitart; he was unable to learn the native name. Where this came from there is some snow in winter."

29106 to 29109. SACCHARUM OFFICINARUM L. Sugar cane.

From Japan. Purchased from the Yokohama Nursery Co., Yokohama, Japan.
Received December 3, 1910.

Cuttings of the following:

- 29106. "*Chikusho*. Early variety."
- 29107. "Earliest variety from Kagawa Ken."
- 29108. "*Kikaigashima*. Early variety from Kagoshima Ken."
- 29109. "*Oshima*. Early variety from Kagoshima Ken."

See No. 28193 for purpose for which introduced.

29110. CITRUS LIMETTA Risso. Lime.

From Seharunpur, India. Received through Mr. R. S. Woglum, of the United States Department of Agriculture, December 5, 1910.

Sylhet.

29111 to 29115.

From Peradeniya, Ceylon. Presented by Dr. John C. Willis, director, Royal Botanic Gardens. Received December 5, 1910.

Seeds of the following:

- 29111. *DIOSPYROS AFFINIS* Thwaites.

Distribution.—Known only from the island of Ceylon.

- 29112. *DIOSPYROS ATTENUATA* Thwaites.

Distribution.—Known only from the island of Ceylon.

- 29113. *DIOSPYROS INSIGNIS* Thwaites.

Distribution.—In the damp forests on the slopes of the mountains of Ceylon up to an elevation of 2,000 feet, and on the Anamually Hills in southern India, to an elevation of 2,000 to 3,000 feet.

- 29114. *DIOSPYROS MOONII* Thwaites.

Distribution.—Known only from the island of Ceylon.

- 29115. *MABA OBLONGIFOLIA* Hiern.

A small tree closely allied to *Diospyros*.

Distribution.—Low moist regions up to an elevation of 1,000 feet in the island of Ceylon.

29116. DIOSPYROS sp. Persimmon.

From China. Presented by Mr. E. T. Williams, a member of the Division of Far Eastern Affairs, Department of State, through Dr. R. H. True. Received December 5, 1910.

"Some years since, when Mr. Frank Meyer was in China, he asked me to obtain for him if possible some seeds of the Chinese persimmon, which is for the most part seedless. I mentioned it at the time to a friend, who is now in Nanking and who has sent me these seeds just found in a persimmon. If he had sent a larger quantity an interesting experiment might have been made, since all Chinese persimmons are propagated by grafting upon the wild stock." (*Extract from letter of Mr. E. T. Williams, Dec. 1, 1910, to Dr. True.*)

29117 to 29121. ASPARAGUS spp.

From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received December 5, 1910.

Seeds of the following climbing varieties:

29117. *ASPARAGUS BLAMPEDII* Hort.

29118. *ASPARAGUS CRISPUS* Lam.

See No. 28923 for previous introduction.

29119. *ASPARAGUS COMORENSIS* Hort.

29120. *ASPARAGUS SCANDENS DEFLEXUS* Baker.

Distribution.—In woods on the lower slopes of the mountains in the Somerset division of the central region of Cape Colony and in the vicinity of Cape Town.

29121. *ASPARAGUS VERTICILLATUS* L.

"Fruit red. Height 3 to 4 meters. Foliage ornamental from April to October."

Distribution.—Southeastern Europe and western Asia, extending from Turkey through the Caucasus region to the southern part of Siberia and northern Persia.

29122. CORDEAUXIA EDULIS Hemsl.**Yeheb nut.**

From Kew, England. Presented by Dr. David Prain, director, Royal Botanic Gardens. Received December 2, 1910.

"The yeheb plant grows in poor sandy soil in the dry regions of Italian Somaliland. The underground soil is said to be somewhat moist and at certain seasons of the year there are regular and plentiful rains in the localities where the plant grows.

"The yeheb forms an evergreen bush about 4 to 6 feet high and the seeds are an important article of food among the Somalis.

"Its seeds, called nuts, have a high food value, containing 21 per cent of cane sugar, 2 per cent of reducing sugars, 13 per cent of proteids, and 37 per cent of carbohydrates. They form an article of commerce and are brought to the coast by caravans. They are eaten by the native Dolbahanta Somalis in preference to rice and dates. Though the climate of Somaliland is not well known, the indications are that where this plant grows long periods of drought occur, but rains are abundant and regular at certain seasons of the year. Winter temperatures probably do not go below freezing. The plant quickly forms a long taproot, bears when only 4 feet high, has evergreen leaves which if crushed stain the fingers a magenta color, and grows into a large tree.

"At Kew seedlings have been raised without difficulty under moist tropical conditions, but it is hoped that it may be possible to establish the plant in dry regions where the soil is poor and the conditions are similar to those of its native country." (See Kew Bulletin, 1908, No. 1, pp. 36-44, and No. 3, p. 141.)

"I doubt very much if Florida will suit this plant, but the southern part of California seems more hopeful. It is evident, however, from its behavior with us that it is one of those desert plants which insist on having desert conditions so far at least as the surface is concerned, though I suspect it likes to be able to tap a deep supply of water. Perhaps a sand draw, provided such can be found in a region sufficiently hot, would be the ideal locality for it." (*Prain.*)

29123 and 29124. CITRUS LIMETTA Risso.**Lime.**

From Trinidad, British West Indies. Collected and presented by Mr. G. P. Wilder, of Hawaii. Received December 7, 1910.

Cuttings of the following; notes by Mr. Wilder:

29123. "Spineless lime, from St. Clair Experiment Station, Port of Spain.

This lime had few seeds, juice was of fine quality, shape roundish and depressed. There are about 6 to 8 trees, very healthy and robust. The entire wood is free from thorns."

29123 and 29124. CITRUS LIMETTA Risso—Continued.

29124. "Potter seedless lime, from Tree River Estate, La Brea, Pitch Lake. These limes were excellent. I sampled over two dozen and did not find any signs of seeds. Skin greenish; rind thick, but as the location of the tree was a low, damp, fertile valley I am led to believe it would not produce such coarse-skinned fruits under different circumstances."

29125. NICOTIANA TABACUM L.**Tobacco.**

From Cuba. Presented by Mr. F. L. Cervantes, Havana, Cuba. Received December 8, 1910.

San Juan y Martines.

29126. NICOTIANA TABACUM L.**Tobacco.**

From Pinar del Rio, Cuba. Presented by Mr. Francisco A. Montero, Santa Clara, Cuba. Received December 12, 1910.

Vuelta.

29127 and 29128. NICOTIANA TABACUM L.**Tobacco.**

From Cuba. Presented by Mr. Robert M. Grey, superintendent, Harvard Botanical Experiment Station, Cienfuegos, Cuba. Received December 5, 1910.

Seeds of the following:

29127. *Remedios.* Grown one year in Manicaragua, the chief tobacco district in Santa Clara Province.

29128. *Vuelta.* From the city of Pinar del Rio, Vuelta Abajo district.

29129. RAJANIA PLEIONEURA Griseb.**"Waw-waw."**

From Cuba. Presented by Mr. Robert M. Grey, superintendent, Harvard Botanical Experiment Station, Cienfuegos, Cuba. Received December 8, 1910.

"A large tuber that was brought in by one of the Guajiros from the hills under the name '*Guagua ñame*.' It is also known here under the name of '*Alambrillo*.'" (Grey.)

See No. 28894 for previous introduction.

29130 and 29131. SACCHARUM OFFICINARUM L.**Sugar cane.**

From Cuba. Presented by Mr. Robert M. Grey, superintendent, Harvard Botanical Experiment Station, Cienfuegos, Cuba. Received December 8, 1910.

Cuttings of the following:

29130. *Caledonia Queen.*

29131. *Louisiana Purple.*

29132. CASTANEA CRENATA S. and Z.**Chestnut.**

From Japan. Presented by Prof. T. Minami, Agricultural College, Tokoku Imperial University, Hokushu, Japan. Received December 10, 1910.

Aomori. A variety of chestnut which is said to occur in the northern part of the north island of Japan.

29133. PHYTOLACCA ACINOSA Roxb.

From Japan. Purchased from the Yokohama Nursery Co., Yokohama, Japan. Received December 10, 1910.

Variety *esculenta*. "This is a perennial found wild only in moist mountain-forest undergrowth. The leaves are eaten boiled in miso soup by rural people; the root is somewhat poisonous and is used as a drug by the herb medical school; the berries are not edible." (*Yokohama Nursery Co.*)

Distribution.—Southeastern Asia, extending from northern India eastward through China to Japan.

29134. ILEX PARAGUARIENSIS St. Hil.**Yerba maté.**

From Paraguay. Presented by Mr. C. F. Mead, Cahi Puente, Paraguay.

Received December 10, 1910.

"Crop of 1910."

See No. 29097 for description.

29137. PERSEA AMERICANA Miller 1768.**Avocado.***(Persea gratissima Gaertn. f. 1805.)*

Material growing at the Subtropical Garden, Miami, Fla. Numbered December, 1910.

"Bud wood furnished by Mr. Andrew Hardie, Cocanut Grove, Fla., who mailed a specimen of fruit to this office. The tree is a seedling of the *Trapp* variety, but differs from this sort in the shape of the fruit, which is slightly ovoid and of a very attractive purplish-red color. It is said to be quite prolific and promises to be one of the most valuable accessions to our avocado collection, not so much on account of superior quality but for its unusually attractive appearance and the fact that it ripens late, about Christmas. The fruit is medium to large size, possesses a very thick skin, and the meat is medium thick, yellow, and very tender. The seed is comparatively large but firmly inclosed by the meat." (*H. F. Schultz.*)

29138 to 29140. MEDICAGO spp.

From India. Presented by Mr. F. Booth Tucker, Salvation Army, Simla, India.

Received December 14, 1910.

Seeds of the following; notes by Mr. Tucker:

29138. MEDICAGO HISPIDA APICULATA (Willd.) Urban.

From the Punjab Agricultural College (irrigated colonies). "This is known here as *Maina*. The Director of Agriculture tells me that this is an excellent fodder for cattle, and especially for milch cows, but that it is not suitable for horses."

28139. MEDICAGO FALCATA L.

From Lahul, in the heart of the Himalayas, near Kashmir. "Lahul is a valley 10,000 to 11,000 feet above the sea, surrounded by glaciers and snowy mountains and covered with snow during the winter months."

29140. MEDICAGO SATIVA L.**Alfalfa.**

From the Punjab Agricultural College (irrigated colonies). "The ordinary *Medicago sativa* as grown in the Punjab by horse breeders."

29141 to 29150.

Received through Mr. Frank N. Meyer, agricultural explorer, December 10, 1910.

Cuttings of the following:

29141. RIBES sp.**Red currant.**

From near Guldsha, Russian Turkestan. "(No. 791, October 10, 1910.) Found growing on a dry mountain side at an elevation of about 6,000 feet. Of vigorous growth, the tallest stems being 8 feet long. Of value in hybridization experiments and, when somewhat improved, as a hardy garden fruit for the northern sections of the United States." (*Meyer.*)

29142. RIBES NIGRUM L.**Black currant.**

From near Terek-Dawan, Russian Turkestan. "(No. 792, October 13, 1910.) Found growing in a cold, stony canyon at an elevation of over 9,000 feet above sea level. The Russians who live here and there in the mountains make a very palatable preserve from the ripe berries. This shrub may be of value as a garden fruit in the most northern sections of the United States." (*Meyer.*)

29141 to 29150—Continued.

29143. *SALIX* sp.

Willow.

From Guldsha, Russian Turkestan. "(No. 793, October 11, 1910.) A willow found on sandy alkaline flats; has long, very narrow leaves, and reddish twigs. The trunk, when getting old, assumes a black color and is often twisted and gnarled. The wood is harder than any other willow I ever saw. The trees grow only to a moderate size and may be of value as ornamental garden and park trees and as windbreaks in alkaline sections of the United States. The young twigs are very pliable and may be employed as a tying material." (*Meyer.*)

29144. *SALIX* sp.

Willow.

From Chinese Turkestan, near Irkestan. "(No. 794, October 15, 1910.) A shrubby willow with reddish twigs and very lanceolate leaves, found growing on very sandy and alkaline places. It has sand-binding qualities, while the young twigs are fit for tying purposes and for basket material. Of value in sandy and alkaline sections of the United States as a hedge plant and an arrester of moving sands." (*Meyer.*)

29145. *SALIX* sp.

Willow.

From Chinese Turkestan, near Irkestan. "(No. 795, October 15, 1910.) A tall shrubby willow having reddish young twigs, while the stems become quite white when older. Growing on alkaline flats on wind-swept places. Of value as a windbreak and hedge plant in alkaline sections of the northern United States." (*Meyer.*)

29146. *LONICERA* sp.

Honeysuckle.

From Chinese Turkestan, near Irkestan. "(No. 796, October 15, 1910.) A shrubby honeysuckle, growing on remarkably dry, stony, and wind-swept places at altitudes often over 9,000 feet above the sea. It has small, somewhat downy leaves and bears yellow berries. Recommended as an ornamental garden shrub and as a possible hedge plant in the dry, cold sections of the United States." (*Meyer.*)

29147. *REAUMURIA* sp.

From Chinese Turkestan, near Irkestan. "(No. 797, October 15, 1910.) A Tamarix-like shrub found on very sandy and alkaline flats at elevations of 8,000 feet and less. Recommended as a sand binder in sandy sections of the northern United States." (*Meyer.*)

29148. *POPULUS* sp.

Poplar.

From Chinese Turkestan, near Irkestan. "(No. 798, October 15, 1910.) A poplar found here and there in clumps on sandy flats and on alkaline places. Leaves round, elliptical. Color of trunk and twigs gray white. The trees apparently do not grow very large. They may prove of value as shade trees and as windbreaks around gardens in alkaline sections of the northern United States." (*Meyer.*)

29149. *TAMARIX* sp.

Tamarisk.

From near Ulukshat, Chinese Turkestan. "(No. 799, October 16, 1910.) A low-growing tamarisk found on sandy and alkaline level places at elevations of 7,000 and 8,000 feet above sea level. Arrests blowing sands quite well and is recommended for this purpose in the colder sections of the United States." (*Meyer.*)

29150. *CRATAEGUS* sp.

Hawthorn.

From near Kan-Shugan, Chinese Turkestan. "(No. 800, October 17, 1910.) A hawthorn of dense growth, reaching the size of a small tree. Leaves large and deeply lobed; berries pale yellow. Found on stony places along water-courses at elevations of 7,000 and 8,000 feet above sea level. Of value as an ornamental park and garden tree in the northern sections of the United States." (*Meyer.*)

29151. EUPHORBIA CANARIENSIS L.

From Teneriffe, Canary Islands. Presented by Mr. R. J. Hazeltine, American vice consul. Received November 10, 1910.

See Nos. 3031 and 10693 for previous introductions.

Distribution.—A shrub or tree 12 to 20 feet high with 4 to 6 angled branches, native of the Canary Islands.

29152 and 29153.

From island of Mauritius. Presented by Mr. G. Regnard, Port Louis. Received December 9, 1910.

Seeds of the following:

29152. NORTHEA SEYCHELLANA Hook. f.**Capucin.**

This is a tree 60 to 80 feet high, with thick coriaceous leaves 5 to 9 inches long, and bearing inconspicuous flowers in small axillary clusters which produce large fruits with a seed the size of a hen's egg. It is a native of Three Brothers Island in the Seychelles Archipelago.

29153. STADMANNIA OPPOSITIFOLIA Lam.

"*Bois de fer.*"—This tree is scarce in our forests; it produces bunches of a fruit resembling *Nephelium longan* which are devastated before ripening by monkeys and bats. The pulp of these fruits makes excellent jelly and jam which recall those of quince. The tree is fine and its wood of an extreme tenacity." (Regnard.)

Distribution.—Found occasionally in the forests in the island of Mauritius.

29154 to 29160.

The following plants propagated by Mr. G. L. Taber, Glen St. Mary Nursery Co., Glen St. Mary, Fla., for distribution by the Office of Crop Physiology and Breeding Investigations. Numbered December 16, 1910.

Seedling plants as follows:

29154 to 29158. CITRUS TRIFOLIATA × AURANTIUM.**Citrange.**

29154. *Colman.* See No. 19609.

29155. *Morton.* See No. 16872.

29156. *Rusk.* See No. 13002.

29157. *Rusk.* Budded on sour stock.

29158. *Colman.* Budded on sour stock.

29159. CITRUS DECUMANA × NOBILIS.**Tangelo.**

Sampson. "This is a hybrid between the ordinary grapefruit or pomelo (female parent) and the *Dancey* tangerine (male parent). The color of the fruit is much like that of an orange. Its size is midway between the pomelo and tangerine. In flavor it is sprightly acid, but rather sweeter than the pomelo. Its most pronounced characters, however, are the looseness of the rind and the ease with which the segments can be separated; in these qualities it partakes of the nature of the tangerine. In short, the fruit is much like a high-flavored orange, but has a trace of the sprightly flavor of the grapefruit. The tree is an early and abundant bearer. The *Sampson* tangelo is of course no hardier than either parent and can be grown only in the orange belts of Florida and California." (W. T. Swingle.)

NOTE.—This *Sampson* tangelo is exactly the same as Nos. 13004 and 21596, except that it is grafted on *Citrus trifoliata* stock.

29154 to 29160—Continued.

29160. CITRUS TRIFOLIATA × AURANTIUM.

Citrange.

Etonia or flowering citrange: "This is a hybrid between the common orange and the trifoliata, having the same parents as the *Colman*, *Morton*, and other standard citranges. So far it has borne almost no fruit. On the other hand, it flowers profusely in early spring and the flowers are very large in size, larger than those of either parent. They appear with the leaves and are often so abundant as almost to hide the foliage. This variety is being distributed on a small scale for trial in cities for dooryard planting, where an ornamental rather than a fruit tree is desired." (*W. T. Swingle*.)

29161. PERSEA AMERICANA Miller.

Avocado.

From Barbados, British West Indies. Presented by Mr. A. S. Archer, Antigua, British West Indies. Received December 16, 1910.

"The fruits from which I obtained these seeds were purple and each weighed from 2 pounds 10 ounces up to 3 pounds 2 ounces; nothing better could have been desired. The seed cavity was small." (*Archer*.)

29162. ANONA RETICULATA L.

Custard-apple.

From Cairns, North Queensland, Australia. Presented by Prof. Howard Newport, instructor in tropical agriculture and manager of the Kamerunga State Nursery, Department of Agriculture. Received December 15, 1910.

Cuttings.

29163. NICOTIANA TABACUM L.

Tobacco.

From the district of Mascota, in the State of Jalisco, on the west coast of Mexico. Presented by Dr. Pehr Olsson-Seffer, editor, *American Review of Tropical Agriculture*, Mexico City, Mexico. Received December 10, 1910.

"This seed is from the variety which supplies the cigar leaf of the locally well-known Mascota cigars, and is considered one of the best in this country." (*Olsson-Seffer*.)

29164. AGAVE sp.

Agave.

From Costa Rica. Presented by Mr. Carlos Wercklé, through Prof. H. Pittier. Received December 15, 1910.

"These plants are of no value for the production of fiber, but the character of the leaves indicates that they are likely to be very attractive ornamentals and I suggest that they be distributed either to botanical gardens or to growers of succulent plants." (*L. H. Dewey*.)

29165. CITRUS sp.

Orange.

From Bahia, Brazil. Presented by Mr. Southard P. Warner, American consul. Received December 10, 1910.

"*Laranja da terra*." Used as a stock. For description, see No. 30605.

29166. ANDROPOGON SORGHUM (L.) Brot.

Kowliang (?)

From Chillicothe, Tex. Grown by Mr. A. B. Conner, in charge of the Department experiment farm. Received December 12, 1910.

"Grown from No. 27764 which was secured from Mr. J. K. Freed, Scott City, Kans. This variety came from Mr. Freed as White Amber sorgo, but it is evidently a kowliang. It gives considerable promise, because of its earliness, as both a grain and a forage crop." (*Conner*.)

29167. ZEA MAYS L.**Corn.**

From near Ciudad del Maiz, State of San Luis Potosi, Mexico, the latitude being approximately 22° 20' and the longitude being approximately 20 miles west of the line which runs exactly north and south through Mexico City. The elevation of the ranch is approximately 1,000 meters. Presented by Mr. Wilbert L. Bonney, American consul, San Luis Potosi, Mexico. Received December 16, 1910.

"This corn was grown by an American ranchman who selects his seed corn carefully, and this sample may be regarded as representing the best corn now grown in this State." (*Bonney.*)

29169 and 29170.

From Seharunpur, India. Received through Mr. R. S. Woglum, of the United States Department of Agriculture, December 20, 1910.

Seeds of the following:

29169. BAMBOS sp.**Bamboo.**

"Said to be seed of a bamboo which grows wild around Seharunpur." (*Woglum.*)

29170. LIMONIA ACIDISSIMA L.

"I found one tree of this species in the Botanical Garden at Seharunpur. Tree 25 to 30 feet tall and very healthy. Fruit ripening at this time of year (November 15). A small blackish fruit, almost half an inch in diameter, containing a small pit of roundish form." (*Woglum.*)

See No. 26496 for previous introduction.

29171. DIOSPYROS sp.**Persimmon.**

From Tampico, Mexico. Presented by Mr. Clarence A. Miller, American consul, who procured them from Mr. Mordelo Vincent. Received December 17, 1910.

"The fruits from which this seed was taken are not very large. They have green skins and black meat and resemble in contour the Japanese persimmon. They are very sweet but insipid and full of seed." (*Miller.*)

29172. NICOTIANA TRIGONOPHYLLA Dunal.**Wild tobacco.**

From the neighborhood of San Pedro de Ocampo, Mexico. Presented by Dr. Elsworth Chaffey, Cerros, Mazapil, Zacatecas, Mexico. Received December 19, 1910.

Cimarron.

Distribution.—In sandy soil, Texas to California and southward to the vicinity of Coahuila in central Mexico.

29173. ZIZANIA LATIFOLIA (Griseb.) Stapf.**Wild rice.**

From Canton, China. Presented by Mr. G. W. Groff, Canton Christian College. Received December 20, 1910.

"*Woo kau or kau sun.*"

See No. 26760 for previous introduction.

29174 and 29175.

From Mexico. Secured by the Supervisor of Forests, Tucson, Ariz., from the Director General of Agriculture of Mexico. Received December 20, 1910.

Seeds of the following:

29174. CUPRESSUS THURIFERA H. B. K. **Cypress.**

Distribution.—Wooded slopes of the mountains in the vicinity of Tasco and Orizaba, Mexico, at an elevation of 5,000 to 7,000 feet.

29175. PINUS MONTEZUMAE Lamb. **Pine.**

Distribution.—Mountain slopes at an elevation of 3,500 to 12,000 feet from Chihuahua southward to the vicinity of Orizaba, Mexico.

29176 to 29197.

From Philippine Islands. Presented by Mr. H. M. Curran, Forest Service, Manila, P. I. Received December 12, 1910.

Seeds of the following; notes by Mr. Curran:

29176. CLITORIA TERNATEA L.

"*Calocanting* (Tagalog). Rapid-growing vine with ornamental foliage and large, blue solitary flowers. Commonly cultivated in the Philippines."

29177. (Undetermined.) (Fabaceæ.)

"A vine found commonly by roadsides, ornamental."

29178. CASUARINA EQUISETIFOLIA Stickman.

"*Agoho* (Tagalog). A rapid-growing ornamental timber tree, suitable for planting on sandy exposed beaches."

29179. CARICA PAPAYA L.

Papaya.

"Edible fruit, good flavor; cultivated and wild."

29180. DIDYMOSPERMA sp.

"*Pugaham* (Tagalog). A large, rapid-growing, very ornamental palm."

29181. INTSIA sp.

"*Ipil* (Tagalog). Large, rapid-growing, ornamental timber tree. Wood very durable. Grows near tidewater. Purple and white flowers."

29182. CASSIA FISTULA L.

"*Cana fistula* (Tagalog). An ornamental rapid-growing timber tree; wood durable. Bears large clusters of yellow flowers, very showy. Fruit is used for medicine."

29183. OROXYLON INDICUM (L.) Vent.

"*Pincapincahan* (Tagalog). Ornamental medium-sized tree. Very rapid growing. Wood used for matches. Large purple flowers and conspicuous fruit."

Distribution.—Throughout India from the Himalayas, where it reaches an altitude of 3,000 feet, southward to Ceylon and Burma, and in Cochin China and the Malay Archipelago.

29184. MEZONEURON GLABRUM Desf.

"*Cabit-cabag* (Tagalog). A rapid-growing vine, bearing ornamental fruit."

Distribution.—The Province of Tenasserim in southern Burma, the island of Timor, and in the Philippines.

29185. CASSIA sp.

"*Balacbac* (Tagalog). A low-growing shrub with conspicuous ornamental yellow flowers."

29176 to 29197—Continued.

29186. (Undetermined.) (Fabaceæ.)

"*Tagum* (Tagalog). A small tree, wood hard and durable, bears spikes of purple flowers."

29187. *ERYTHRINA INDICA* Lam.

"*Dap-dap* (Tagalog). Ornamental seaside tree with conspicuous masses of showy red flowers which appear before the leaves. Plant deciduous during dry season."

See No. 26499 for previous introduction.

29188. *WALLICHIA TREMULA* (Bl.) Mart.

"*Dumayuca* (Tagalog). An ornamental low-growing palm. Midrib used for making brooms."

Distribution.—Known only from the Philippines.

29189. (Undetermined.)

"*Antipolo* (Tagalog). A large rapid-growing timber tree. Tree yields abundant white latex, used for birdlime. Immature fruit reported edible when cooked."

29190. *ALBIZZIA* sp.

"*Malasampaloc* (Tagalog). An ornamental medium-sized timber tree; durable wood. Tree resembles *Tamarindus indica*."

29191. *PITHECOLOBIUM ACLE* (Bl.) Vidal.

"*Acle* (Tagalog). An ornamental timber tree. Mimosa-like white flowers; conspicuous fruits."

29192. (Undetermined.) (Asclepiadaceæ.)

"Ornamental vine. Large fruits; possible source of rubber. Abundant fiber, with seeds; possibly of commercial importance."

29193. *VIGNA UNGUICULATA* L.

Cowpea.

"*Setar* (Tagalog). Cowpea cultivated by Negritos of Zambales."

29194. *TOONA CALANTAS* Merrill and Rolfe.

"*Calantas* (Tagalog). An ornamental timber tree furnishing the cigar-box cedar."

Distribution.—The islands of Luzon and Mindoro, in the Philippines.

29195. *DIOSPYROS KAKI* L. f.

Persimmon.

"Chinese persimmon sold on the Manila market. Large red fruits, good flavor."

29196. (Undetermined.) (Apocynaceæ.)

"An ornamental vine, copious latex, possible source of rubber and fiber."

29197. *MESPILUS GERMANICA* L.

Medlar.

"Medlar pear, sold on the markets of eastern Europe. Flesh soft, with much the color and taste of decayed apples."

29198 to 29203.

From Argentina. Procured by Prof. F. Lamson-Scribner from Mr. Carlos Girola, secretary of the Society Rural, Buenos Aires. Received October 17, 1910.

Seeds of the following:

29198. *CUCUMIS MELO* L.

Muskmelon.

From the American consul, Buenos Aires.

29198 to 29203—Continued.

29199. *ORYZA SATIVA* L. Rice.
"Bolita." From Tucuman Province.
29200. *ORYZA SATIVA* L. Rice.
"Negro." From Misiones Province.
29201. *TRITICUM DURUM* Desf. Wheat.
"Anchuelo." From Entre Rios Province.
29202. *TRITICUM TURGIDUM* L. Wheat.
"Medeah." From Jujuy Province.
29203. *TRITICUM DURUM* Desf. Wheat.
"Candeal." From central part of La Pampa Province.

29206 to 29208. CHAYOTA EDULIS Jacq. Chayote.

From Kingston, Jamaica. Presented by Mr. William Harris, Superintendent of Public Gardens, Department of Agriculture. Received December 22, 1910.

Seeds of the following:

29206. Black (not black, however, but a dark green).
 29207. Green (a light green).
 29208. White (milky white).

29209. CUCURBITA PEPO L. Pumpkin.

From Florida. Presented by Mr. Lorenzo D. Creel, United States Indian Service, Fort Myers, Fla. Received December 22, 1910.

"Seeds of a pumpkin I found the Seminole Indians in the Everglades were growing and probably have been growing for a very long time. It is remarkable for its sweetness and good keeping quality." (*Creel.*)

29210. HIBISCUS SABDARIFFA L. Roselle.

From Mayaguez, Porto Rico. Presented by Mr. C. F. Kinman, horticulturist, Porto Rico Agricultural Experiment Station. Received December 29, 1910.

"Roselle does exceeding well here. The plants when set 3 or 4 feet apart branch freely, grow to be 6 to 9 feet tall, and produce 200 or more fruits. The fruit makes a delicious sauce which by one not familiar with roselle is mistaken for cranberry. At Thanksgiving the fruit is in demand here by Americans, but I am surprised at the little care they have for it except on that date. The Porto Ricans do not care for so tart a fruit, so the market for it here will continue to be very limited. The plants require so little attention and are so prolific that quantities of it would be raised were there any demand. It can be dried easily, and some experiments indicate that it will keep well, making it possible to supply a market at any time of the year.

"I can only guess as to the value of this plant in the Southern States where the soil is quite sandy and in some places dry, as my experience in growing roselle is limited to Porto Rico and Cuba, where the soil is a heavy clay and where the plants do well." (*Kinman.*)

29211. ANANAS SATIVUS Schult. f. Pineapple.

From Tjiomas, Java. Presented by the Director of Agriculture, Buitenzorg, Java. Received December 29, 1910.

"A large pineapple, mandaloeng, from Tjiomas. This is less fragrant than the common *nanas Bogor*, also from Tjiomas." (*Teysmannia*, vol. 21, no. 3, 1910.)

29213 to 29270.

Received through Mr. Frank N. Meyer, agricultural explorer, December 20, 1910.
Seeds of the following:

29213. *AMYGDALUS COMMUNIS* L. Almond.

From Khokan, Russian Turkestan. "(No. 1413a, September 28, 1910.) *Astachan badam*. A large thin-shelled variety of almond cultivated around Khokan and considered to be fine. As the climate around Khokan is semi-arid with long, hot summers and medium-cold winters, while the soil is decidedly alkaline, these almonds may prove hardier and more alkali resistant than the varieties coming from southern Europe." (Meyer.)

29214. *AMYGDALUS COMMUNIS* L. Almond.

From Khokan, Russian Turkestan. "(No. 1414a, September 28, 1910.) *Kasan badam*. A large, medium, thin-shelled almond cultivated around Khokan, considered to be a fine variety. For further remarks see preceding number." (Meyer.)

29215. *AMYGDALUS COMMUNIS* L. Almond.

From Khokan, Russian Turkestan. "(No. 1415a, September 28, 1910.) *Khandak badam*. A small, round, semihard-shelled almond grown around Khokan. For climatological remarks see No. 1413a (S. P. I. No. 29213)." (Meyer.)

29216. *AMYGDALUS COMMUNIS* L. Almond.

From Khokan, Russian Turkestan. "(No. 1416a, September 28, 1910.) *Khandak badam*. A small soft-shelled variety of almond grown around Khokan. See No. 1413a (S. P. I. No. 29213) for further remarks." (Meyer.)

29217. *AMYGDALUS COMMUNIS* L. Almond.

From Khokan, Russian Turkestan. "(No. 1417a, September 28, 1910.) *Khandak badam*. A small soft-shelled variety of almond grown around Khokan. See No. 1413a (S. P. I. No. 29213) for further remarks." (Meyer.)

29218. *AMYGDALUS COMMUNIS* L. Almond.

From Khokan, Russian Turkestan. "(No. 1418a, September 28, 1910.) *Tash badam*. A medium-sized hard-shelled variety of almond grown around Khokan. See No. 1413a (S. P. I. No. 29213) for further remarks." (Meyer.)

29219. *PISTACIA VERA* L. Pistache.

From Khokan, Russian Turkestan. "(No. 1419a, September 28, 1910.) A good variety of pistache nut coming from northern Afghanistan." (Meyer.)

29220. *PRUNUS ARMENIACA* L. Apricot.

From Khokan, Russian Turkestan. "(No. 1420a, September 28, 1910.) *Khandak uruk*. A small variety of apricot, exceedingly sweet, having a thin-shelled stone and sweet kernel, cultivated around Khokan." (Meyer.)

29221. *PRUNUS ARMENIACA* L. Apricot.

From Khokan, Russian Turkestan. "(No. 1421a, September 28, 1910.) *Mirshan djali uruk*. A large variety of apricot of very sweet taste. Stone large; kernel sweet. Cultivated around Khokan." (Meyer.)

29222. *PRUNUS ARMENIACA* L. Apricot.

From Khokan, Russian Turkestan. "(No. 1422a, September 28, 1910.) A large apricot of good quality, obtained in Khokan." (Meyer.)

29213 to 29270—Continued.

29223. *PRUNUS ARMENIACA* L.

Apricot.

From Kashgar, Chinese Turkestan. "(No. 1423a, October 27, 1910.) Sweetkerneled apricot stones sold on fruit stands in Kashgar. Eaten like almonds; also much used in cakes." (*Meyer.*)

29224. *PRUNUS CERASIFERA DIVARICATA* (Ledeb.) Schneider (?). Plum.

From Khokan, Russian Turkestan. "(No. 1424a, September 28, 1910.) *Alitcha*. A small, very sour variety of plum of reddish or yellow color. Used by the native population in meat stews, making tough meat more digestible. May be of value as a stock for plums in semiarid regions where high summer temperatures and medium-cold winters prevail." (*Meyer.*)

29225. *ELAEAGNUS ANGUSTIFOLIA* L.

Oleaster.

From Andijan, Russian Turkestan. "(No. 1425a, October 4, 1910.) *Djigda*. A large-fruited variety sold on the market in Andijan and eaten as sweetmeats. Of value as an ornamental small tree and as a windbreak in alkaline sections in the mild-wintered semiarid parts of the United States." (*Meyer.*)

29226. *PRUNUS DOMESTICA* L.

Plum.

From Kashgar, Chinese Turkestan. "(No. 1426a, October 27, 1910.) A blue plum much grown around Kashgar. Sold fresh and dried. Makes a fair preserve. Apparently the ordinary European prune. To be sown for identification purposes." (*Meyer.*)

29227. *AMYGDALUS PERSICA NECTARINA* Ait.

Nectarine.

From Samarkand, Russian Turkestan. "(No. 1427a, July 27, 1910.) A yellow clingstone nectarine of medium size; meat very firm and of medium-sweet taste, not melting. A rare variety." (*Meyer.*)

29228. *AMYGDALUS* sp.

Peach.

From Tashkend, Russian Turkestan. "(No. 1428a, September 10, 1910.) A large flat peach having white meat, very juicy and sweet." (*Meyer.*)

29229. *RIBES* sp.

Red currant.

From near Guldsha, Russian Turkestan. "(No. 1429a, October 10, 1910.) Found growing on a dry mountain side at an elevation of about 6,000 feet above sea level. For further remarks see No. 791 (S. P. I. No. 29141), under which cuttings were sent." (*Meyer.*)

29230. *RIBES NIGRUM* L.

Black currant.

From near Terek-Dawan, Russian Turkestan. "(No. 1430a, October 13, 1910.) Found growing in a cold stony canyon at an elevation of over 9,000 feet above sea level. For further remarks see No. 792 (S. P. I. No. 29142), under which cuttings were sent." (*Meyer.*)

29231. *CUCUMIS MELO* L.

Muskmelon.

From Samarkand, Russian Turkestan. "(No. 1431a, July 22, 1910.) A fine muskmelon of round shape; rind drab-green; flesh yellowish colored, of very sweet and aromatic taste. To be tested under irrigation in the dry and hot sections of the southwestern United States." (*Meyer.*)

29232. *CUCUMIS MELO* L.

Muskmelon.

From Samarkand, Russian Turkestan. "(No. 1432a, July 23, 1910.) A muskmelon of round shape; medium size; rind greenish yellow; flesh of deep-green color and of very spicy flavor. To be tested like preceding number." (*Meyer.*)

29213 to 29270—Continued.

29233. CUCUMIS MELO L.

Muskmelon.

From Samarkand, Russian Turkestan. "(No. 1433a, July 28, 1910.) A fine muskmelon of flat-round shape; rind yellowish; flesh of rosy-green color; very sweet and aromatic. To be tested like No. 29231." (*Meyer.*)

29234. CUCUMIS MELO L.

Muskmelon.

From Tashkend, Russian Turkestan. "(No. 1434a, August 11, 1910.) A melon of oval shape; rind drab green; flesh thick and green; of delicious sweet taste and long-keeping qualities. To be tested like No. 29231." (*Meyer.*)

29235. CUCUMIS MELO L.

Muskmelon.

From near Tashkend, Russian Turkestan. "(No. 1435a, September 20, 1910.) A melon of oval form; greenish rind; salmon-red flesh; of fresh, sweet taste; has remarkably few seeds; possesses long-keeping qualities. Curiously called 'Amerikanski' melon and believed to have come from America. To be tested like No. 29231." (*Meyer.*)

29236. CUCUMIS MELO L.

Muskmelon.

From Kostakos, Russian Turkestan. "(No. 1436a, September 24, 1910.) A melon of oblong shape; rind greenish; flesh white, very juicy, sweet, and aromatic. To be tested like No. 29231." (*Meyer.*)

29237. CUCUMIS MELO L.

Muskmelon.

From Tashkend, Russian Turkestan. "(No. 1437a, August 14, 1910.) A melon of round-oblong shape; rind golden yellow, slightly ribbed; flesh whitish and of remarkably sweet and aromatic flavor. To be tested like No. 29231." (*Meyer.*)

29238. CUCUMIS MELO L.

Muskmelon.

From Andijan, Russian Turkestan. "(No. 1438a, October 4, 1910.) A small very oblong-pointed melon; rind green; flesh of rosy color; taste fresh, sweet. A so-called winter melon; can be kept until New Year's Day. To be tested like No. 29231." (*Meyer.*)

29239. CUCUMIS MELO L.

Muskmelon.

From Andijan, Russian Turkestan. "(No. 1439a, October 4, 1910.) A melon of oval shape; rind greenish yellow, netted; flesh white, melting, and very sweet. Can be kept for several weeks. To be tested like No. 29231." (*Meyer.*)

29240. CUCUMIS MELO L.

Muskmelon.

From Andijan, Russian Turkestan. "(No. 1440a, October 4, 1910.) A melon of oblong-pointed form; rind drab green; flesh white and very firm. Can be kept for several months. Probably a good variety from which to make preserves. To be tested like No. 29231." (*Meyer.*)

29241. CUCUMIS MELO L.

Muskmelon.

From Osh, Russian Turkestan. "(No. 1441a, October 9, 1910.) A melon of large size and oval shape; rind yellow with green veins; flesh pale yellow, of a fine, fresh, sweet, and aromatic flavor. To be tested in somewhat cooler regions than No. 29231, as Osh is over 4,000 feet altitude." (*Meyer.*)

29242. CITRULLUS VULGARIS Schrad.

Watermelon.

From Samarkand, Russian Turkestan. "(No. 1442a, July 27, 1910.) A small watermelon having light-green rind, while the flesh is salmon red; taste fresh, sweet. Has small seeds and is an early ripener. To be tested like No. 29231." (*Meyer.*)

29213 to 29270—Continued.

29243. *CITRULLUS VULGARIS* Schrad. Watermelon.

From Tashkend, Russian Turkestan. "(No. 1443a, August 2, 1910.) A small watermelon; rind light green; flesh salmon red, sweet and very juicy. To be tested like No. 29231." (*Meyer.*)

29244. *CITRULLUS VULGARIS* Schrad. Watermelon.

From Tashkend, Russian Turkestan. "(No. 1444a, August 24, 1910.) A small-sized watermelon; rind dark green with light-green patches; flesh pale red, of fresh, sweet taste. To be tested like No. 29231." (*Meyer.*)

29245. *ACER* sp. Maple.

From near Kizil-Kurgan, Russian Turkestan. "(No. 1445a, October 11, 1910.) A maple of small size found on dry and stony mountain sides at elevations of 5,000 feet and over. Bears small leaves which vary much in shape, being found in all forms between trilobed and entire. Of value as a small ornamental tree in the drier sections of the United States." (*Meyer.*)

29246. *JUNIPERUS FOETIDISSIMA* Willd. Juniper.

From near Guldsha, Russian Turkestan. "(No. 1446a, October 10, 1910.) Found on very sterile and stony mountain sides at high altitudes. Generally of very gnarled and twisted shapes. Much used in the mountains for building purposes and for fuel. Native name, *Artchak*. To be tested in the inter-mountain sections of the United States." (*Meyer.*)

29247. *BERBERIS* sp. Barberry.

From near Kan-Shugan, Chinese Turkestan. "(No. 1447a, October 17, 1910.) A very spiny barberry having dentate, somewhat undulate leaves and bearing racemes of coral-red berries. Found on sandy and sterile level places at elevations of about 8,000 feet above sea level. Of value as an ornamental garden and park shrub in the northern sections of the United States." (*Meyer.*)

29248. *BERBERIS* sp. Barberry.

From near Guldsha, Russian Turkestan. "(No. 1448a, October 10, 1910.) A tall-growing barberry found on dry, sandy, and sterile places; bears blue berries. Of value like the preceding number." (*Meyer.*)

29249. *COTONEASTER* sp.

From near Guldsha, Russian Turkestan. "(No. 1449a, October 10, 1910.) Found growing on dry and sterile locations at altitudes of 5,000 feet above sea level. Of value like preceding numbers." (*Meyer.*)

29250. *NITRARIA SCHOBERI* L. Desert currant.

From near Ulukshat, Chinese Turkestan. "(No. 1450a, October 15, 1910.) A spiny shrub found on alkaline and sandy places at elevations of 6,000 to 8,000 feet above sea level. It grows from 3 to 7 feet high and has small white foliage and erect racemes of small juicy black-violet berries. These are edible and of sweet saline taste, but this rather high alkaline property leaves an unpleasant aftertaste in one's mouth, while one's throat also feels the sharpness of the salt. The seeds occupy too much of the berry and the fruits have no value to the white races of men. This desert currant possesses great sand-binding qualities, however, and deserves to be tested for this purpose in the elevated and cool arid and semiarid regions of the United States." (*Meyer.*)

Distribution.—Southeastern Europe and central Asia, extending from the Caucasus region eastward through southern Siberia, northern Persia, and Mongolia to China.

29213 to 29270—Continued.

29251. *Rosa* sp.

Rose.

From near Osh, Russian Turkestan. "(No. 1451a, October 9, 1910.) A small, shrubby wild rose, growing in stony and pebbly banks in a semiarid region. Apparently has red flowers. Of possible value as a garden and park shrub in the northern and in the semiarid sections of the United States." (*Meyer.*)

29252. *Rosa* sp.

Rose.

From near Guldsha, Russian Turkestan. "(No. 1452a, October 11, 1910.) A wild rose, rather spiny, found on dry stony places. Apparently has reddish flowers. Of value possibly like the preceding number." (*Meyer.*)

29253. *Rosa* sp.

Rose.

From near Guldsha, Russian Turkestan. "(No. 1453a, October 10, 1910.) A wild rose of spreading habits, found on dry and sandy places. Apparently has yellow flowers. Possibly of value like the preceding numbers." (*Meyer.*)

29254. *Rosa* sp.

Rose.

From near Langar, Russian Turkestan. "(No. 1454a, October 9, 1910.) A wild rose, apparently bearing white flowers, found in rather sterile places. Is armed with an abundance of white spines. Of value possibly like the preceding numbers." (*Meyer.*)

29255. *Rosa* sp.

Rose.

From near Terek-Dawan, Russian Turkestan. "(No. 1455a, October 13, 1910.) A wild rose found in a bleak, rocky, and dry canyon at an elevation of over 9,000 feet above sea level. Of possible value like the preceding numbers." (*Meyer.*)

29256. *Rosa* sp.

Rose.

From near Irkestan in Chinese Turkestan. "(No. 1456a, October 15, 1910.) A wild shrubby rose found on dry stony banks along a watercourse. Altitude about 9,000 feet. Of value possibly like the preceding numbers." (*Meyer.*)

29257. *Rosa* sp.

Rose.

From near Kok-su, Russian Turkestan. "(No. 1457a, October 14, 1910.) A wild rose found in sterile soil along a mountain stream at about 8,000 feet altitude. Of value possibly like the preceding numbers." (*Meyer.*)

29258. *Rosa* sp.

Rose.

From near Kan-Shugan, Chinese Turkestan. "(No. 1458a, October 18, 1910.) A shrubby wild rose found in stony places. Has very large white spines. Of possible value like the preceding numbers." (*Meyer.*)

29259. *CRATAEGUS* sp.

Hawthorn.

From near Kan-Shugan, Chinese Turkestan. "(No. 1459a, October 17, 1910.) A hawthorn of dense growth. For further remarks see No. 800 (S. P. I. No. 29150), under which cuttings were sent." (*Meyer.*)

29260. *MEDICAGO SATIVA* L.

Alfalfa.

From near Kizil-Kurgan, Russian Turkestan. "(No. 1460a, October 11, 1910.) An alfalfa found in dry decomposed rock banks at an elevation of between 5,000 and 7,000 feet above sea level. Apparently the genuine wild form of the cultivated lucern." (*Meyer.*)

29261. *KNAUTIA* sp.

From near Guldsha, Russian Turkestan. "(No. 1461a, October 10, 1910.) An ornamental dipsaceous perennial plant, growing from 2 to 4 feet high and bearing large flower heads of a purplish-blue color on stiff, erect stems. Found on a dry, fertile hill slope. Of value apparently as a garden perennial for the northern sections of the United States." (*Meyer.*)

29213 to 29270—Continued.

29262. *VIGNA UNGUICULATA* (L.) Walp.

Cowpea.

From Khojend, Russian Turkestan. "(No. 1462a, September 28, 1910.) A large variety of cowpea used locally as a food for man and beast. Deserves to be tested under irrigation in the hot and dry sections of the United States." (Meyer.)

29263. *TRIFOLIUM FRAGIFERUM* L.

Clover.

From near Kok-su, Russian Turkestan. "(No. 1463a, October 14, 1910.) A creeping perennial clover found along a watercourse on clayey alkaline soil at an altitude of 9,000 feet. Possibly of value as a forage and lawn plant in the cooler and intermountain sections of the United States." (Meyer.)

29264. *IRIS* sp.

Iris.

From near Kan-Shugan, Chinese Turkestan. "(No. 1464a, October 18, 1910.) An iris growing in enormous quantities on alkaline plains at elevations of 6,000 feet above sea level. The plants are a conspicuous feature of the landscape. Said to produce masses of light-blue flowers in early summer. Possibly of value as a ground cover in alkaline sections of the United States." (Meyer.)

29265. *GLAUCIUM* sp.

From near Ulukshat, Chinese Turkestan. "(No. 1465a, October 15, 1910.) Found on dry stony mountain slopes at elevations of over 9,000 feet above sea level. Of possible use as an ornamental garden plant in the colder sections of the United States." (Meyer.)

29266. *STATICE* sp.

From near Kostakos, Russian Turkestan. "(No. 1466a, September 24, 1910.) A remarkable perennial having very finely divided foliage and producing masses of flowers of a beautiful metallic-blue color. Found in alkaline places in the desert. Of decided value as a cut flower and as an ornamental garden plant in alkaline sections of the United States." (Meyer.)

29267. *VIGNA SESQUIPEDALIS* (L.) W. F. Wight.

From Kashgar, Chinese Turkestan. "(No. 1467a, October 23, 1910.) A very long bean used by the local population as a green vegetable. Can also be dried and kept for winter uses. Able to withstand considerable alkali in the soil. Of value as a garden vegetable under irrigation in alkaline sections in the hot and dry parts of the United States." (Meyer.)

29268. *CUCUMIS SATIVUS* L.

Cucumber.

From Kashgar, Chinese Turkestan. "(No. 1468a, October 29, 1910.) A Chinese variety of cucumber, called *Huang kua*, of medium size; green color; good for pickling purposes. Able to withstand considerable alkali and may be tested like the preceding number." (Meyer.)

29269. *BRASSICA PEKINENSIS* (Lour.) Skeels.

Cabbage.

From Kashgar, Chinese Turkestan. "(No. 1469a, October 23, 1910.) A Chinese variety of autumn cabbage called *Ghai pai tsai*. Looking somewhat like Swiss chard. Leaves of dark green, having a very broad, white midrib. The plants do not make any head. They are able to withstand considerable alkali and deserve to be tested like preceding numbers." (Meyer.)

29270. *BRASSICA PEKINENSIS* (Lour.) Skeels.

Cabbage.

From Kashgar, Chinese Turkestan. "(No. 1470a, October 23, 1910.) A large variety of Chinese winter cabbage called *Tung pai tsai*. Of fine quality but requires a long season. Able to grow in quite alkaline soil and deserves to be tested like preceding numbers." (Meyer.)

29271 to 29310.

The following list represents some promising varieties of cowpeas grown at the Arlington Experimental Farm in 1910. Numbered in December, 1910.

Notes on the following by Prof. C. V. Piper:

29271 to 29275. VIGNA CATJANG (Burm.) Walp.**Catjang.**

29271. Originally found growing in No. 21569A at the Arlington Experimental Farm. A buff-seeded catjang of very peculiar habit and possibly a distinct species.

29272. Found mixed with guar, No. 18648, from Surat, India, and grown under temporary No. 0336. A catjang with brown-eyed yellowish seeds. A peculiar variety, but not of much agricultural value.

29273. Found mixed with adzuki bean, No. 17321, from Hankow, China, and grown under temporary No. 0927. A distinct variety of catjang, with pale-buff seeds marbled with dark brown. A prolific but not a tall variety.

29274. A single plant found at Arlington, Va., in 1909, in No. 21603 and grown under temporary No. 01446. A catjang with marbled seeds.

29275. Found growing in adzuki bean, No. 17321, from Hankow, China, and grown under temporary No. 0931. Seeds pink buff. A prolific catjang of good habit.

29276 to 29302. VIGNA UNGUICULATA (L.) Walp.**Cowpea.**

29276. From the Public Gardens, Jamaica. Grown under temporary No. 0145. A cowpea with black-eyed white seeds; prolific and of good habit.

29277. From Nairobi, British East Africa. Grown under temporary No. 0509. A peculiar variety of cowpea with small pods which tend to spread out horizontally. The seeds are buff, mostly clouded with purple. A prolific variety, but does not grow very large.

29278. From the Botanic Gardens, Tokyo, Japan; received under the name *Vigna sinensis* var. *bicontorta*. Grown under temporary No. 0511. A curious cowpea with curved or coiled pods and buff-colored seeds.

29279. From the Missouri Botanical Garden, St. Louis. Grown under temporary No. 0531. A cowpea with small buff seeds; quite prolific.

29280. From Livorno, Italy. Grown under temporary No. 0536A. An early cowpea with black-and-white seeds, similar to *Holstein*, No. 17327.

29281. From the same source as the preceding (No. 29280). Grown under temporary No. 0536B. Seeds white, splotted with red.

29282. From the same source as No. 29280. Originally grown from a single seed under temporary No. 0536J. The earliest cowpea yet grown at the Arlington Experimental Farm, maturing at least 10 days in advance of any other variety. The seeds are buff or pinkish buff. The variety is very prolific and will probably be of value for growing northward.

29283. From the same source as No. 29280. Grown under temporary No. 0536K. A prolific early variety, with buff-pink seeds, but too small to be of great value.

29271 to 29310—Continued.

29276 to 29302. VIGNA UNGUICULATA—Continued.

29284. From J. W. Trinkle, Madison, Ind. Grown under temporary No. 0554H. This variety is very similar to *Brown Coffee*, No. 17404, but has much broader pods and is earlier. It is a derivative of a hybrid between *Black* and *Taylor*.
29285. From the same source as the preceding. Grown under temporary No. 0562. This is a prolific variety with very small, globose black seeds. It apparently originated as a natural hybrid between *Lady* and *Black*.
29286. *Red Yellow-Hull*. From the Arkansas Agricultural Experiment Station, 1903. Grown under temporary No. 0590. A prolific, vigorous variety. It is probably the best cowpea with maroon-colored seeds grown at Arlington Experimental Farm.
29287. *Self-Seeding Clay*. From the same source as the preceding. Grown from temporary No. 0593. A variety with buff seeds; of rather low habit.
29288. *Mountain Crowder*. From the same source as No. 29286. Grown under temporary No. 0594. This has buff-colored seeds and is very similar to *Michigan Favorite*, maturing in the same time.
29289. From Mr. W. S. O'Bier, Seaford, Del. Grown under temporary No. 0598. A maroon-colored cowpea of good habit and medium early.
29290. *Red Sport*. From the same source as No. 29286. Grown under temporary No. 0604. A very distinct variety with reddish seeds.
29291. *Cotton Patch*. From Mr. J. R. Register, Lamar, S. C. Grown under temporary No. 0814. This variety has pinkish-buff seeds and is very similar to *Clay*, No. 17340. It is, however, very prolific and quite early.
29292. From the Amzi Godden Seed Co., Birmingham, Ala. Grown for several years under temporary No. 0897. This is an excellent cowpea with black seeds.
29293. From the Arkansas Agricultural Experiment Station, through Prof. C. L. Newman. Grown under temporary No. 0905. This has white seeds with the *New Era* color about the eye. It is prolific and of fairly good habit.
29294. From Mr. P. L. Sigman, Alexis, N. C. Grown under temporary No. 0978. A very distinct cowpea with white seeds blotched with red.
29295. From Mr. A. D. McLeon, Red Springs, N. C. Grown under temporary No. 01014. This is undoubtedly a hybrid between *Whippoorwill* and *Taylor*, having the combined markings of both. The variety is very similar to *Taylor* in all respects except seed.
29296. From Mr. J. W. Markham, Guin, Ala. Grown under temporary No. 01017. This is a variety with seeds practically indistinguishable from *New Era*, but quite different in habit.
29297. From Mr. J. L. Forelines, Millard, Ark. Grown under temporary No. 01361. A variety with red-and-white blotched seed, of medium value.

29271 to 29310—Continued.

29276 to 29302. *VIGNA UNGUICULATA*—Continued.

29298. From Mr. J. D. McLouth, Muskegon, Mich. Grown under temporary No. 01363. A moderately early bushy variety with red-and-white blotched seeds.

29299. *White Giant*. From the Kansas Agricultural Experiment Station (Kansas No. 121). Grown under temporary No. 01375. A black-eyed cowpea very similar to No. 22050.

29300. From T. W. Wood & Sons, Richmond, Va., received under the name *Rice*. Grown under temporary No. 01380. This is a white-seeded cowpea very distinct from any other variety grown.

29301. *Miller*. From the N. L. Willet Seed Co., Augusta, Ga. Grown under temporary No. 01400. The seed of the Miller cowpea occurring on the market is a mixture of several varieties. This cowpea has buff seeds. It is very much like No. 17340 and not superior.

29302. From the same source as the preceding. Grown under temporary No. 01402. It is very vigorous and different from any other grown.

29303. *VIGNA SESQUIPEDALIS* (L.) W. F. Wight.

From Tehwa, China. Grown under temporary No. 01421. A very distinct cowpea with kidney-shaped seeds, pink excepting one end, which is white.

29304. *VIGNA UNGUICULATA* (L.) Walp.

Cowpea.

From a single plant found at the Arlington Experimental Farm in 1909 and grown under temporary No. 01508. Seeds white, with the *Whippoorwill* color around the eye. In all probability this is a hybrid between *Whippoorwill* and *Blackeye*. It is a variety of moderate value.

29305. *VIGNA CATJANG* (Burm.) Walp.

From the Botanical Gardens, Madrid, Spain, received as *Dolichos tranquebaricus*. Grown three years under temporary No. 0409. Seeds cream buff. An interesting variety which makes but a small growth.

29306 to 29310. *VIGNA UNGUICULATA* (L.) Walp.

Cowpea.

29306. From Mississippi, 1910. A buff-colored cowpea very similar to *Unknown*, but with very flat pale seeds. Grown under temporary No. 01331.

29307. From Mr. C. E. Fant, Chester, S. C., 1909. Grown under temporary No. 01281. A variety with maroon kidney-shaped seeds. It is much later than *Red Ripper*, bearing the same relation to it that *Unknown* does to *Clay*.

29308. From Mr. G. W. Duren, Booneville, Ark. Grown under temporary No. 01023. A white-seeded table cowpea having the same habits as *Clay*, No. 17359, but producing very large kidney-shaped white seeds.

29309. *Trinkle's Holstein*. A variety that originated with Mr. J. W. Trinkle, Madison, Ind. Grown for two years under temporary No. 0917. It is considerably superior to ordinary *Holstein*, No. 17327.

29310. From a single plant found at the Arlington Experimental Farm, 1909, and grown under temporary No. 01507. A cowpea with seeds like *New Era*, and like that variety growing erect, but producing slender viny branches having small leaflets.

29311 to 29314. CHAYOTA EDULIS Jacq.**Chayote.**

From San Salvador, Central America. Presented by Mr. Francisco G. du Cachon, Director General of Agriculture. Received December 21 and 27, 1910.

Seeds of the following:

29311. Small, white.

29312. Small, light green.

29313. Medium to large, smooth, light green.

29314. Medium to large, more or less spiny, dark green.

29315. NICOTIANA TABACUM L.**Tobacco.**

From the Compostela region, Territory of Tepic, Mexico. Presented by Mr. Alfred Lonergan, Ixtlan del Rio, Tepic, Mexico. Received December 28, 1910.

"This is generally conceded to be the best tobacco grown on this western coast of the Pacific slope in Mexico." (*Lonergan.*)

29316. ANONA CHERIMOLA Miller.**Cherimoya.**

From Oaxaca, Mexico. Presented by Prof. Felix Foex. Received December 27, 1910.

"These seeds came from a very interesting fruit of good size, good shape, pretty appearance, second quality, and having large seeds; the skin is as thick as the shell of a coconut, but not so hard. It resists well a pretty hard shock and pressure and would be very good for shipping." (*Foex.*)

29317. ZEA MAYS L.**Corn.**

From Quito, Ecuador. Presented by Mr. C. de San Juan, Barcelona, Spain, who procured them from Mr. Carlos Tobar, of Quito. Received December 28, 1910.

"Seed of a curious corn that in Ecuador gives great results. I gave some to my friends and everywhere it grew extraordinarily, from 3 to 4 meters high, but did not produce seed, I suppose for want of temperature. The stalks were so high and thick that they looked like bamboos." (*San Juan.*)

29318. BELOU MARMELOS (L.) W. F. Wight.**Bael.**

From Philippine Islands. Presented by Mr. William S. Lyon, Manila. Received December 29, 1910.

"Some of these fruits were from a tree producing fruits nearly spherical. This, however, I judge to be merely a variation from the type." (*Lyon.*)

29319. PASSIFLORA sp.**Passion flower.**

From Buitenzorg, Java. Presented by the director, Department of Agriculture. Received December 29, 1910.

Variety *Perbawati*.

29320. FURCRAEA sp.

From Nice, France. Presented by Dr. A. Robertson-Proschowsky. Received November 2, 1910.

"The plant from which these bulbs were obtained has formed no trunk and is evidently dying off after having produced its offspring. Leaves are, when mature, about 2 meters long by 15 to 20 centimeters broad. I do not know whether it is a species of industrial value. Here in my garden the leaves have proved very durable and strong for tying, for making mats to cover delicate plants, etc., just like the leaves of *Cordyline (australis* Hook.) (*indivisa* Hort.)" (*Proschowsky.*)

29321. NICOTIANA TABACUM L.**Tobacco.**

From the Vuelta Abajò district immediately west of Pinar del Rio, Cuba. Presented by Mr. K. E. Reineman, Academia Raja Yoga, Pinar del Rio, at the request of Mr. H. S. Turner, Santiago de Cuba. Received December 31, 1910.

29322. MEDICAGO SATIVA L.**Alfalfa.**

From Quetta, British India. Presented by Mr. F. Booth Tucker, Salvation Army, Simla, India, who procured it from the Military Farm Department at Quetta. Received December 31, 1910.

29326 and 29327. COLOCASIA spp.

From Canton, China. Presented by Mr. G. W. Groff, Canton Christian College. Received December 20, 1910.

Tubers of the following:

29326. "*Kao tsao fu.*"

29327. "*Pat long fu.*"

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Mr. Hall
U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 233.

B. T. GALLOWAY, *Chief of Bureau.* Mr. Hall

SEEDS AND PLANTS IMPORTED

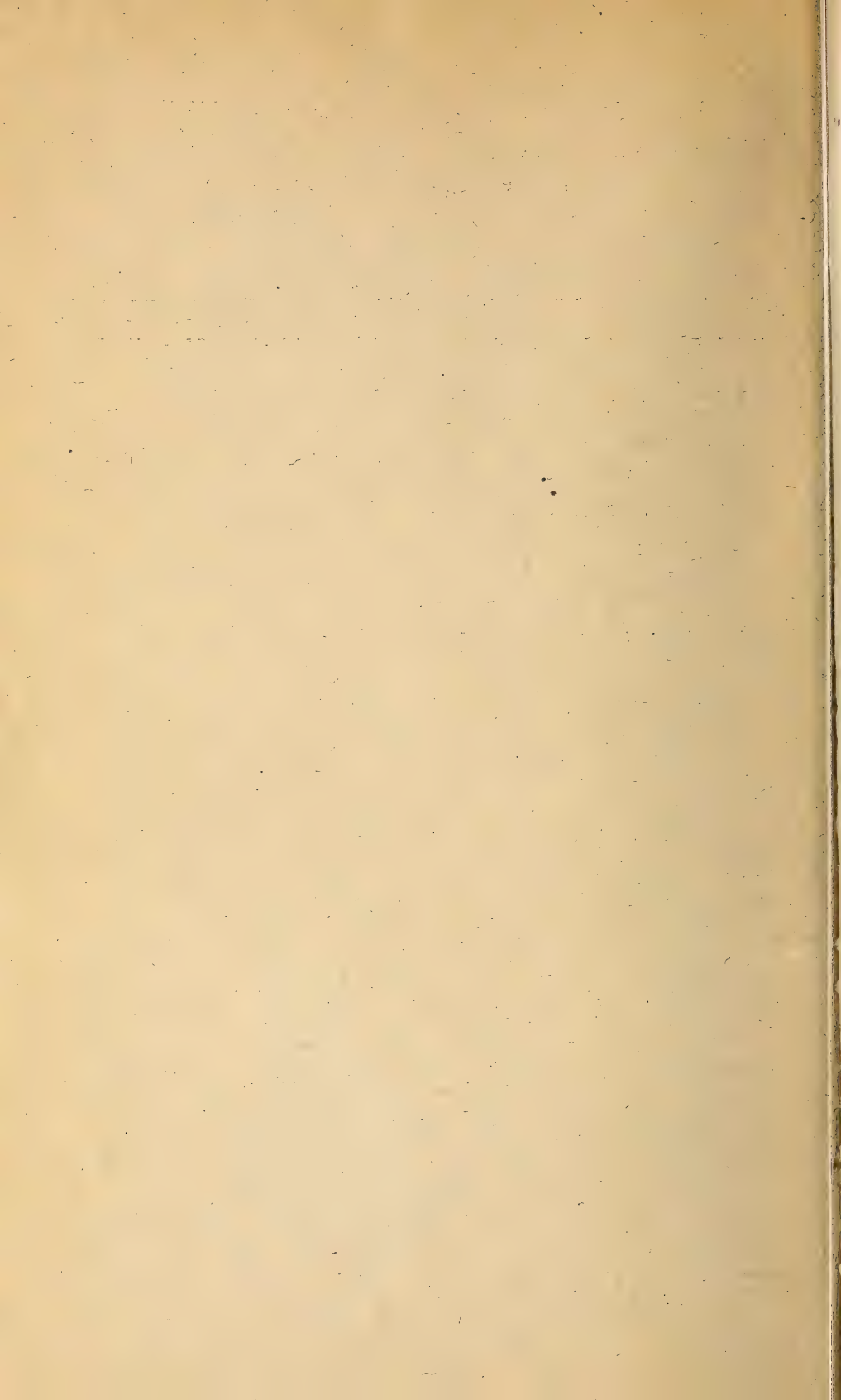
DURING THE PERIOD FROM JANUARY 1
TO MARCH 31, 1911:

INVENTORY No. 26; Nos. 29328 to 30461.

ISSUED FEBRUARY 20, 1912.



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GOVERNMENT PRINTING OFFICE.
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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., September 26, 1911.

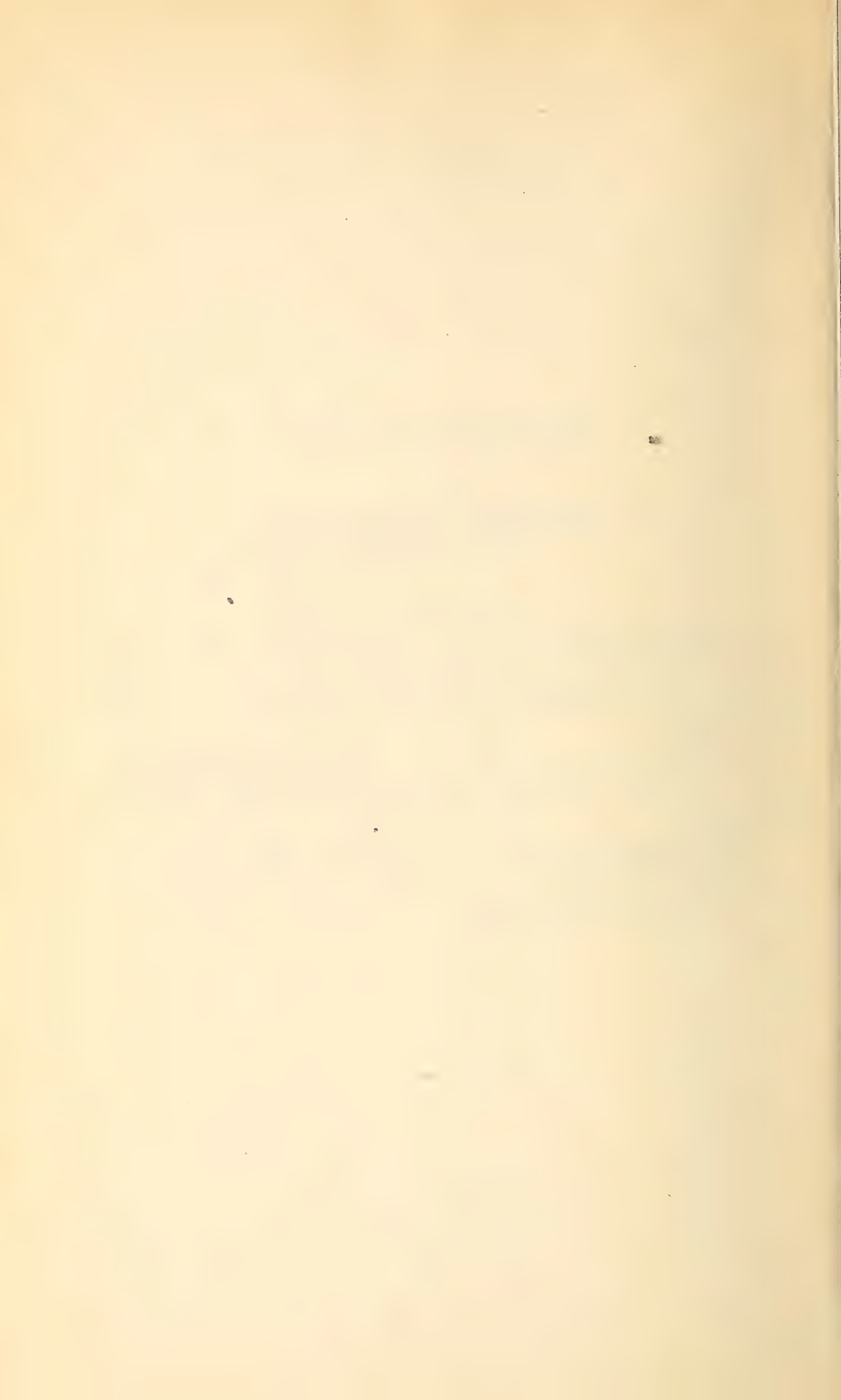
SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 233 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from January 1 to March 31, 1911: Inventory No. 26; Nos. 29328 to 30461."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

B. T. GALLOWAY,
Chief of Bureau.

HON. JAMES WILSON,
Secretary of Agriculture.



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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM JANUARY 1 TO MARCH 31, 1911: INVENTORY NO. 26; NOS. 29328 TO 30461.

INTRODUCTORY STATEMENT.

Following a custom established in 1898, we have gone through this inventory of 1,134 introductions and singled out such as are likely to interest in an unusual way the plant experimenters of the country. This should not be taken to mean that the most important have been included, for experience has often demonstrated in this plant-introduction work the truth of the Biblical saying, "The stone which the builders rejected is become the head of the corner."

Western Chinese Turkestan is a land of oases and deserts. It is accessible only to caravans which follow more or less well-defined trails across it, and this fact alone would make any plants coming from it of peculiar interest. When these have been collected by one who has such a wide acquaintance with our own arid and irrigated regions as has our explorer, Mr. Frank N. Meyer, they become of unusual value. His Chinese Turkestan collection in this inventory (Nos. 30042 to 30060, 30141 to 30153, 30308 to 30364, and 30393 to 30415) includes a large number of promising table-grape varieties; two extremely alkali-resistant species of *Tamarix*; a remarkable collection of poplars, among them the desert poplar (*Populus euphratica*, No. 30054), which should be adapted to our western plains; the Karagatch elm (No. 30060) from the oases of Sandju; a number of interesting willows; a large collection of sweet-kerneled and bitter-kerneled apricots, remarkable for their resistance to cold and alkali; several new forms, among them a white variety, of the Chinese plum-cherry (*Prunus tomentosa*), which Mr. Meyer thinks is deserving of consideration as a dry-land fruit; the celebrated Kutchu pear, a fine variety of the Chinese species (*Pyrus chinensis*); several noteworthy varieties of peaches, nectarines, prunes, plums, apples, and oriental pears; a yellow-flowered alfalfa grown near Pustan Terek at an altitude of 7,000 feet; a collection of the watermelons and muskmelons of the region; and a large-fruited form of the extremely drought and cold resistant oleaster, which plant has been found to be specially suited to our Great Plains area.

Possibly some amateur who has seen the thousands of unutilized May apples which grow in our eastern forests might like to try some experiments in breeding them with the Himalayan species (*Podophyllum emodi*, No. 29328). A cherimoya from an altitude of 5,000 feet in Mexico, as large as a coconut, a good shipper, and selling locally for 25 cents apiece, will interest California and Florida growers who are experimenting with this promising fruit (No. 29350). *Talauma mutabilis* (No. 29358) from Java, though a strictly tropical species, is closely enough related to the magnolias to suggest that, owing to its gorgeous yellow flowers, it is worth trying to hybridize it with our white-flowering hardy species. To those who still believe, as we do, that the mangosteen needs a stock plant, the bitter kola (*Garcinia kola*, No. 29362) of Nigeria, as well as a wild species of *Garcinia* from Brazil (No. 30225), will be of interest. In an attempt to obtain varieties of tobacco which will resist the wilt disease that threatens a wide area of tobacco land in the South, we have continued the introduction of as many types of tobacco from Cuba, Central America, and Mexico as can be found, a number being included in this inventory.

The probable development of persimmon growing as a great fruit industry has warranted us in continuing our search for as many species as possible which have any likelihood of usefulness to the breeder, and this inventory announces the introduction of the ebony tree of Ceylon (No. 29384); a seedless and puckerless chance seedling from Florida (No. 29329); the black tsao (*Diospyros lotus*, No. 29486) from Tientsin; and a nonastringent Japanese variety (No. 30066).

One of the largest and rarest dates and, justly, the most celebrated date of Tunis is the Menakher, which was studied by Mr. Thomas H. Kearney several years ago in the oases of Tunis. No. 29391 represents a shipment of 1,000 pounds of this remarkable date imported in order to obtain the seed for date planters in the Southwest.

The Abyssinian clovers have attracted the attention of at least one breeder in America, so he, and probably others, will be interested in 11 strains collected by the American vice consul general at Addis Abeba (Nos. 29392 to 29403). As an ornamental vine, *Cissus capensis* (No. 29408) is worthy of special attention, for as now growing on Mr. H. E. Huntington's place in Pasadena it is certainly a most promising plant for southern California. A peculiar interest would be attached to the cotton seeds (Nos. 29411 and 29412) by American cotton growers if they realized that Mesopotamia, the country of their origin, is likely to be one of the great cotton-producing regions of the world as soon as Sir William Willcocks finishes his great irrigation scheme on the Tigris.

The growth in popularity in America of the casaba, or winter muskmelon, will make the description of cultural methods employed in Malta of interest to the specialist in this new winter fruit (No. 29458).

The success of our experiments in cultivating colocasias in the South makes the introduction of the southern Chinese short-season forms from Canton of interest (Nos. 29482 and 29483), as also a collection from Surinam of colocasias and xanthosomas (No. 29517 to 29520) and a xanthosoma from Canton (No. 30422).

The nanmu tree of the Yangtze Valley may not be hardy outside of Florida and California, but being one of the best timber trees of China, and being on the high road to extermination, it would be well to ascertain whether it can be grown here (No. 29485).

The possibility of growing North Chinese white ginger has attracted our attention, since it is a shorter season crop than the noted Canton ginger. For this purpose plants from the Shantung Province have been imported (Nos. 29529 and 29990).

During his brief stay in Japan, Dr. B. T. Galloway called attention to *Pasania cuspidata* (No. 29533), an evergreen oak which he believes could be used as a hedge plant throughout the South and from northern California northward on the Pacific coast.

Mr. Walter T. Swingle's researches into the relationships of the citrus group and the value of various species for breeding purposes have called to our attention in the deserts of northeastern Australia a remarkable plant, *Atalantia glauca*, having scanty gray-green foliage and small edible fruit, which withstands both drought and cold to a remarkable degree. It is probably the hardiest of all evergreen citrus fruits and is likely to go through warm spells in winter without starting into growth.

Those interested in obtaining plants better suited for cultivation about city homes will find the caraganas (Nos. 29960 to 29962), the barberries (Nos. 29957 to 29959), and the cotoneasters (Nos. 29963 to 29971) sent us by the director of the Kew Gardens of special value; also species secured by Mr. José D. Husbands in Chile (Nos. 30068 to 30079), and the wild roses from Dr. Veit Wittrock in Sweden (Nos. 30254 to 30263). Mr. Aaron Aaronsohn has sent cuttings of the *Pyrus syriaca* (No. 29994) from Palestine, which he recommends from long experience as a stock for early pears in arid soil, and Dr. L. Trabut has sent three dry-land wild pears from Algeria (Nos. 30031 to 30033).

The claims of the edible-fruited *Strychnos*, of which there are several varieties in East Africa, have been emphasized by the fruiting of *Strychnos spinosa* in Florida and the discovery of its remarkable shipping quality and the almost complete freedom from poison of its seeds. Two new forms (Nos. 30025 and 30026) from Amani have been introduced.

Those interested in *Medicago falcata* as a plant for pastures and ranges should have their attention called to Dr. N. H. Nilsson's statement regarding its value in Sweden. The alfalfa breeders will be glad to learn of the introduction of the promising *Medicago*

cancellata (No. 30061), a forage plant of promise which, as yet, has been untried in this country.

American growers of the mango will be interested in several new varieties of this fruit imported from Poona (Nos. 29504 to 29513) and from Lucknow (Nos. 30085 to 30089). The fact that *Eucommia ulmoides* (No. 30137) is hardy as far north as Boston, that it plays an important rôle in Chinese medicine, and that the rubberlike substance which its leaves and bark contain is being thoroughly investigated as a commercial possibility makes the securing of a large quantity of seed through Mr. E. H. Wilson of unusual interest.

Dr. Trabut's hybrid sisal (Nos. 30189 and 30190), which it is claimed is more cold resistant than the ordinary sisal and has more abundant and finer fibers, can not fail to be of great interest to fiber experts, while a collection of sorghos from the Governor of Togoland, German West Africa, may add some valuable varieties to those already growing in America.

The manuscript for this inventory has been prepared by Miss Mary A. Austin and the botanical determinations made by Mr. H. C. Skeels, under the direction of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., September 22, 1911.

INVENTORY

29328. PODOPHYLLUM EMODI Wall.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received January 3, 1911.

"Fruit edible as in American species (*Podophyllum peltatum*). Probably like this can be used as a purgative and hepatic stimulant." (*Von Mueller.*)

See No. 22552 for previous introduction.

Distribution.—Slopes of the interior ranges of the Himalayas at an elevation of 6,000 to 14,000 feet, between Hazara and Sikkim, northern India.

29329. DIOSPYROS sp.

Persimmon.

From Waldo, Fla. Presented by Mr. T. K. Godbey. Received January 4, 1911.
Godbey's Seedless. Said to be a luscious persimmon that is absolutely puckerless.

29330. CYCLANTHERA PEDATA (L.) Schrad.

Caigua.

From Mollendo, Peru. Presented by Mr. William Morrison, American consular agent. Received January 4, 1911.

"The fruit of the caigua is eaten as a vegetable. My cook informs me that the fruit is first cleaned of the seeds and the division that separates the rows, then boiled, but not too tender; a forcemeat composed of finely chopped meat, raisins, walnuts, and chopped hard-boiled eggs, with seasoning, fills the interior; the outside is covered with a mixture of beaten egg and flour, and the caiguas are then fried; or a sauce is made with milk, flour, etc., and in this the caigua is stewed." (*Morrison.*)

See No. 3096 for previous introduction.

Distribution.—From the region of Orizaba in southern Mexico southward through Guatemala and Colombia to Peru.

29331 and 29332.

From Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense, Para, Brazil. Received January 5, 1911.

Seeds of the following; notes by Mr. Fischer:

29331. CARICA PAPAYA L.

Papaya.

"Seeds of what is probably our best variety of *mamão*. The specimen I had must have been 17 or 18 inches long and weighed 9 pounds. I have seen slightly larger ones from the same plant. The fruit was of excellent flavor and contained but few seeds. In a year or even 10 months it is possible to obtain ripe fruits from the papaya in this climate. Here in Belem a papaya like the one described sells for at least a dollar."

29332. CUCUMIS MELO L.

Muskmelon.

"Seeds of a muskmelon, the only kind seen in the markets of Belem, but even this is not grown near here, but in Santarem, about 500 miles up the river. The fruit of this variety is long, smooth, and distinctly ribbed; the flesh is orange colored and of very good flavor. This particular specimen weighed 14 pounds, which is the average weight. It is probably needless to advise

29331 and 29332—Continued.

planting it in the tropical or subtropical regions and growing it in the dry region. Here in Belem these melons sell for from \$1 to \$2."

29333. MANGIFERA INDICA L.**Mango.**

Plants growing at the Subtropical Garden, Miami, Fla. Numbered January 7, 1911.

Haden. "A seedling of a *Mulgoba* mango planted by the late Capt. F. P. Haden and now growing on the Mathams estate, at Cocoanut Grove, Fla. It fruited in 1910 for the first time and promises to be one of the most valuable accessions to our mango collection. The bud wood from which the plants at Miami were grown was furnished by Mr. Kirk Munroe, of Cocoanut Grove, Fla." (*H. F. Schultz.*)

"General form of fruit roundish, $4\frac{1}{8}$ by $3\frac{7}{16}$ by $3\frac{1}{2}$ inches; beak V-shaped, about 1 inch from vertical center of fruit; skin thick, tenacious, surface moderately smooth, greenish yellow to rich yellow, with bright-scarlet blush; bloom profuse, whitish; flesh deep, rich yellow, buttery, juicy, with but little fiber, sweet, rich, very good; seed medium size, flat oval, cling." (*W. N. Irwin.*)

29334. ONONIS ANTIQUORUM L.

From Palestine. Presented by Mr. E. F. Beaumont, American Colony, Jerusalem, Palestine. Received January 6, 1911.

"Seed of a wild perennial plant of the pea family, which grows absolutely everywhere on poor, rocky soil as well as on good ground and which is the deepest rooted plant, next to alfalfa, that grows in the country; it is quite equal to alfalfa in rooting quality. It has a thorn 1 to 2 centimeters long. This plant is greedily eaten by all cattle when it is young and the thorn is tender, but when full grown they can not manage the thorn.

"We are very ignorant about such matters, but we have thought that if this thorn could be bred off, the *Ononis* would make a splendid forage plant, as it grows so well on rocky ground on which nothing else will thrive.

"In the Jordan Valley, owing to the very low altitude, plant life is more or less active at all seasons. We found the *Ononis* growing abundantly along the ditches that bring the water from Elisha's Spring to the irrigated land. About 4 feet was the average height, though some bushes were 5 feet. What interested us most was to see how, after bearing seed, the plant, like the alfalfa, sends out new shoots, some of which were 28 inches long and of a beautiful, tender growth without the first sign of a thorn. We gathered some of this and brought it to our cows, which ate it greedily." (*Beaumont.*)

29335. QUERCUS SUBER L.**Cork oak.**

From the Almoraima woods, 15 miles north of Gibraltar, Spain. Procured by Mr. R. L. Sprague, American consul. Received January 7, 1911.

See Nos. 2665 and 4323 for notes on this species.

29336. EUGENIA sp.

From Paraguay. Presented by Mr. C. F. Mead, Cahi Puente, Paraguay. Received January 5, 1911.

"Called in Guarany 'iba jhai' (i-ba-i). A wild fruit about the size of an apricot and meat similar in color and taste. Outside appearance similar to quince. Very acid and used to some extent for preserves, but principally as food for wild animals in the forests. Borne on a tree which grows to a height of 10 meters and is very similar in looks to the olive; wood excellent for furniture. It bears profusely; each fruit contains from one to three seeds. Found in all parts of Paraguay." (*Mead.*)

29337. CANARIUM PANICULATUM (Lam.) Benth.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received January 6, 1911.

A splendid, erect forest tree growing 30 to 50 feet high.

Distribution.—In the forests on the slopes of the mountains in the interior of the island of Mauritius.

29338. PASSIFLORA EDULIS Sims.**Passion flower.**

Presented by Mr. A. R. Krueger, Burn Brae Plantation, Stuart, Fla., who received them from a commission merchant in New York. Received January 9, 1911.

29340. CANNABIS SATIVA L.**Hemp.**

From Hwai Yuan, China. Procured by Dr. Samuel Cochran. Received January 6, 1911.

"Ho ma."

29341. FERONIA ELEPHANTUM Correa.**Wood-apple.**

From Saigon, Cochin China. Presented by Mr. P. Morange, director, Agricultural and Commercial Service, Cochin China. Received January 10, 1911.

See No. 25888 for description.

29342. NICOTIANA TRIGONOPHYLLA Dunal.**Wild tobacco.**

From Cedros, Mazapil, Zacatecas, Mexico. Presented by Dr. Elswood Chaffey. Received January 11, 1911.

Cimarron.

See No. 29172 for distribution of this species.

29343 to 29347. VITIS VINIFERA L.**Grape.**

From London, England. Presented by Rev. W. Wilks, secretary, Royal Horticultural Society. Received January 9, 1911.

Cuttings of the following:

29343. *Ascot Citronelle.*

29346. *Muscat Champion.*

29344. *Cannon Hill Muscat.*

29347. *Prince of Wales.*

29345. *Lady Hastings.*

29348. NICOTIANA TRIGONOPHYLLA Dunal.**Wild tobacco.**

From Cerritos, San Luis Potosi, Mexico. Presented by Dr. C. A. Purpus, Minas de San Rafael. Received January 10, 1911.

"Tobacco de perro, or coyote."

See No. 29172 for distribution of this species.

29349. MEDICAGO HISPIDA DENTICULATA (Willd.) Urb.**Bur clover.**

From Hangchow, China. Purchased from Rev. John L. Stuart, Southern Presbyterian Mission. Received January 9, 1911.

29350. ANNONA CHERIMOLA Miller.**Cherimoya.**

From Culiacan, Sinaloa, Mexico. Presented by Mr. W. L. McDaniel, Alvin, Tex. Received January 9, 1911.

"These seeds came from fruits as big as a coconut. The plants grow in Mexico up to an altitude of 5,000 feet, and the fruit stands a week or more on the road. The party who furnished me with the above information also states that efforts to get the fruit at Culiacan for shipment to the United States have failed because the local market eats

29350—Continued.

them up like hot cakes, and it will be years before there will be any to spare for export. A big fine fruit costs 25 to 35 cents Mexican in Culiacan." (*McDaniel.*)

29352. PERSEA AMERICANA Miller.**Avocado.**

Plants growing at the Subtropical Garden, Miami, Fla., from bud wood furnished by Mr. C. O. Richardson, Miami, Fla., November 19, 1910. Numbered January, 1911.

"A first-class, medium-late variety especially suitable for the home garden. The tree is reported by Mr. Richardson as being a dwarf grower, producing crops freely and regularly. The fruits are pyriform in shape, averaging in weight between 750 and 800 grams; the seed is generally a little loose, though sometimes firm in its cavity, and of medium size. The meat is of rich deep-yellow color, greenish next to the skin and of mild, rich, and nutty flavor. The skin is smooth, yellowish green with purplish-red splashes and numerous small dots of bronze; it is thick, tenacious, and slightly adhesive to the meat." (*H. F. Schultz.*)

29355 and 29356.

From Tsinan, Shantung, North China. Presented by Mr. J. S. Whitewright, Tsinan Institute. Received January 16, 1911.

Roots of the following:

29355. (Undetermined.) (Zinziberaceæ.)**White ginger.****29356. ZIZIPHUS JUJUBA Miller.****Jujube.**

"The dates of this region are of a poor quality." (*Whitewright.*)

29357. POPULUS TREMULA L.**Poplar.**

From Newry, Ireland. Purchased from Mr. T. Smith, Daisy Hill Nursery. Received January 16, 1911.

Seeds. See No. 29098 for previous introduction.

Distribution.—In woods and forests throughout Europe and Russian Asia from the Mediterranean to the Arctic Circle.

29358. TALAUMA MUTABILIS Blume.

From Buitenzorg, Java. Presented by the director, Department of Agriculture, Java. Received January 14, 1911.

"A magnificent yellow-flowered magnolia-like tree, well worthy of introduction." (*Fairchild.*)

See No. 28794 for distribution of this species.

29359. FICUS UTILIS Sim.

From East Africa. Presented by Mr. O. W. Barrett, Director of Agriculture, Lourenço Marquez, Portuguese East Africa. Received March 29, 1909. Numbered January 17, 1911.

"A medium-sized tree of the open bush from Zululand to Somaliland; prefers sandy soil. Almost evergreen except in long droughts. Thick bark used, when beaten out, for bags, clothing, etc.; appears to wear well. Roots well from cuttings. Fruit worthless. Shironga name *M' Pàmah.*" (*Barrett.*)

"A flat-topped or rounded tree, single stemmed by nature, but often cultivated to the extent of being cut off at the ground so as to produce 4 to 6 clean young coppice branches without knots and of rapid growth, from which to obtain fiber; this after preparation is used as cloth. It is the source of all the native cloth in the M'Chopes

29359—Continued.

district. The manufacture of cloth from this tree is confined to M'Chopes, and the cloths are carried to neighboring districts and sold, where the tree itself is abundant, but used only for rough cordage or for caoutchouc. This latter product is yielded abundantly but is of low quality and value. The preference for M'Chopes cloth I can account for only by the local knowledge of the art of coppicing, and the suitable stems produced thereby." (*Extract from Sim: Forest Flora of Portuguese East Africa, p. 100.*)

29360. PASSIFLORA LIGULARIS Juss.**Passion flower.**

From Mexico. Presented by Mr. Richard M. Stadden, vice and deputy consul in charge, Manzanillo, Mexico. Received January 16, 1911.

29362. GARCINIA KOLA Heckel.**Bitter kola.**

From Ibadan, Southern Nigeria, West Africa. Presented by the curator of the Agricultural Department. Received January 16, 1911.

"Vernacular names.—*Efrie* (*uwet*, McLeod), *bitter kola*, *false kola*, *male kola*, *Orogbo kola nut*.

"Tree grows 10 to 30 feet high. Leaves about 6 inches long, 3 inches broad, shining above, paler beneath. Mature fruit about 3 inches long and $2\frac{1}{2}$ inches across, with remains of the styles at the apex and of five imbricate sepals at the base. Rind apricot colored, resiniferous, covering a juicy, orange-acid pulp. Mature seeds $1\frac{1}{2}$ inches long, $\frac{3}{4}$ inch across, obtuse at both ends, with a brown, parchment-like coat.

"According to Milton (*Jour. Bot.*, vol. 4, 1875, p. 65), the newly dried nuts are esteemed by the natives as a remedy in cases of cough, and are said to improve the voice of the singer. The bitter principle is agreeable and free from the astringency of the common red and white kolas, and it imparts to water a pleasant sweet taste. The bitter kola is also said to be a good restorative after seasickness; it is eaten by the natives to enhance the flavor of liquor (*McLeod, Herb. Kew*), and used as a remedy for dysentery (*Monteiro, Mus. Kew*).

"The seeds of the bitter kola do not appear to possess the same stimulating properties as those of the true kola (*Bichea acuminata*), and are of less commercial importance. The fresh nuts of bitter kola (*Garcinia kola*) in West Africa are worth 2s. for 200 nuts, while the value of the nuts of *Bichea acuminata* is 3s. to 4s. 6d. for 200 (*von Bernegau in Der Tropenpflanzer*, 1904, p. 361)." (*Kew Bul. Misc. Inf.*, add. ser. 9, 1908, pp. 63-64.)

Distribution.—Throughout the west coast of Africa from 10° north latitude to 5° south latitude.

29363. PERSEA AMERICANA Miller.**Avocado.**

Plants grown at the Plant Introduction Garden, Chico, Cal., from seed received from Mr. Ed. Simmonds, Subtropical Garden, Miami, Fla., October 20, 1909. Numbered for convenience in recording distribution January 17, 1911.

Avocados to be distributed in southern California to test the hardiness of the southern types in that locality.

29364. TRITICUM AESTIVUM L.**Wheat.**

From Harbin, Manchuria. Presented by Mr. Roger S. Greene, American consul, through the Bureau of Manufactures, United States Department of Commerce and Labor. Received January 18, 1911.

Seed received with samples of flour mentioned in report published in the Daily Consular and Trade Reports, December 2, 1910.

29373. MIMUSOPS ZEYHERI Sond.**Moople.**

From Magaliesberg, Pretoria, South Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Department of Agriculture, Pretoria. Received January 19, 1911.

"Seed of a tree that has an edible fruit which is slightly astringent and is much eaten by the natives and by white children, but it is not of any particular merit; its taste reminds one a little of acorns. The tree is an evergreen, of shapely habit of growth, and well worth growing as an ornamental. I have no data as to the value of the wood, but that of the closely allied *Mimusops obovata* is described as yellowish white, close grained, tough, heavy, and durable; it is said to be used principally for felines, axles, and various wagon work.

"This tree grows in the upper bushveld, below 4,000 feet altitude, with a rainfall of about 25 inches, falling in the summer months only; it grows in districts practically free from frost." (Davy.)

Distribution.—A large shrub or small tree in the vicinity of Magaliesberg in the Transvaal region of South Africa.

29374 to 29376.

From Magadoxo, Italian Somaliland, Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Department of Agriculture, Pretoria, South Africa. Received January 19, 1911.

Seeds of the following:

29374. ANDROPOGON SORGHUM (L.) Brot.

Durra.

"Red. Probably identical with several which have been received from time to time from Abyssinia." (Carleton R. Ball.)

29375 and 29376. ZEA MAYS L.

Corn.

29375. White Dent.

29376. White Flint.

"These are useful for certain classes of trade and may be of value in extremely arid parts of the Southwest." (Davy.)

29377 to 29379. NICOTIANA TABACUM L.**Tobacco.**

From Cuba. Presented by Mr. F. L. Cervantes, Havana, Cuba. Received January 19, 1911.

Seeds of the following:

29377. From Manicaragua.

29379. From Yara.

29378. From Remedios.

29380. NICOTIANA TABACUM L.**Tobacco.**

From the Vuelta Abajo district, in the immediate vicinity west of the city of Pinar del Rio, Cuba. Presented by Prof. Ramón García Osés, director, Estación Experimental Agronómica, Santiago de las Vegas, Cuba. Received January 20, 1911.

Variety *Havanensis*.

29381. ERIOBOTRYA JAPONICA (Thunb.) Lindl.**Loquat.**

From Chile. Received through Mr. José D. Husbands, Limávida, via Molina, Chile, January 21, 1911.

"Of West-Indian origin but grown in Chile from colonial days. Being acclimated in Chile and accustomed to grow semidry to dry, in poor arid soils, it is better suited for American introduction than direct from the rich soil and moisture conditions of the Tropics." (Husbands.)

29382. FAGELIA sp.

From the high Cordilleras, Chile. Presented by Mr. José D. Husbands, Limá-vida, via Molina, Chile. Received January 18, 1911.

"A new, beautiful, and rare calceolaria, found growing in dry sand." (*Husbands*.)

29383. BOUEA GANDARIA Blume.

From Buitenzorg, Java. Presented by Mr. W. G. Gobius, secretary, Department of Agriculture. Received January 20, 1911.

Distribution.—A tree found on the wooded slopes of the mountains in the island of Java, and cultivated in India.

29384. DIOSPYROS EBENUM Koenig.**Ebony.**

From Colombo, Ceylon. Presented by Dr. C. Drieberg, secretary, Ceylon Agricultural Society. Received January 21, 1911.

Distribution.—The eastern part of India and throughout the Malay Archipelago.

29385 to 29387.

From Seharunpur, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanic Gardens. Received January 16, 1911.

Seeds of the following:

29385. ELEUSINE INDICA (L.) Gaertn.

Ragi millet.

29386. PANICUM MAXIMUM Jacq.

Guinea grass.

29387. ERAGROSTIS PLUMOSA (Retz.) Link.

Distribution.—Throughout the plains and lower hills of India, in Burma, and Ceylon.

"Nos. 29385 and 29387 are very weedy, and when planting care should be taken to plant only pure seed, as the weeds are usually stronger than the desired plant and the specimens collected often prove to be only weedy grasses instead of the kind desired." (*A. S. Hitchcock*.)

29388 and 29389.

From Smyrna, Turkey. Purchased through Mr. Ernest L. Harris, American consul general. Received January 20, 1911.

Seeds of the following:

29388. VICIA ERVILIA (L.) Willd.

Bitter vetch.

29389. LINUM USITATISSIMUM L.

Flax.

Brown seeded.

29390. ANDROPOGON SORGHUM (L.) Brot.**Sorgo.**

From Fort Worth, Tex. Purchased from the American Seed Co., through Mr. A. B. Conner. Received January 20, 1911.

Honey (?). "This seed was being sold under the name of *Red Texas Seeded Ribbon Cane*, but appears to be identical with *Honey sorgo*." (*Conner*.)

29391. PHOENIX DACTYLIFERA L.**Date.**

From Tunis, North Africa. Purchased from Mr. Martel, Deggache, Tunis, through Mr. T. H. Kearney. Received January 21 and 28, 1911.

Menakher. "A large date of good quality and excellent flavor, known only from the Jerid Oases in Tunis, where it has become extremely rare. This variety was formerly the date preferred by the beys of Tunis, and it is stated by the natives of the Jerid that owing to the fact that the agents of the beys were accustomed to confiscate the crop without paying the owners for it, the proprietors of date gardens ceased

29391—Continued.

planting offshoots of the Menakher variety. Fruit purchased in order to obtain seed for planting in the Southwest with the expectation that a considerable percentage will come true to seed or at least produce fruit of superior quality." (*Kearney.*)

29392 to 29405.

From Addis Abeba, Abyssinia. Presented by Mr. Guy R. Love, American vice consul general. Received January 7, 1911.

Seeds of the following; notes by Mr. Love:

29392 to 29403. TRIFOLIUM spp.**Clover.**

29392. "Purple flowered, similar to No. 29393, but while growing the marking of the leaves appears different."

29393. "Purple flowered, similar to No. 29392, but while growing the marking of the leaves appears different."

29394. "Purple flowers, few petals."

29395. "Purple flowers; large loose heads."

29396. "Purple flowers; long thin leaves."

29397. "White flowers; large heads."

29398. "Light-purple flowers; leaves in clusters."

29399. "White flowers; few petals."

29400. "Purple flowers; few petals; thin leaves."

29401. "Purple flowers; grows very close to the ground."

29402. "Dull-purple flowers; appearance of fur on plant and flowers."

29403. "Purple flowers; long heads; thin leaves."

29404. MEDICAGO HISPIDA DENTICULATA (Willd.) Urban.**Bur clover.**

"Small, yellow flowers."

29405. GENISTA (?).

"Yellow flowered."

29407. SORINDEIA MADAGASCARIENSIS DC.**Grape-mango.**

From the island of Mauritius. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received January 23, 1911.

"A tall anacardiaceous shrub which bears panicles of purple flowers, and fruits of a pleasant, sweet-sour, mango taste. These drupes grow in a remarkable and interesting way, not only from the branches, but chiefly from the main trunk of the tree, looking as if they were air roots, with fruit upon them, or like parasites." (*Regnard.*)

Distribution.—Madagascar, Zanzibar, and eastern tropical Africa; cultivated in tropical Asia.

29408. CISSUS CAPENSIS (Burm.) Willd.

From San Gabriel, Cal. Presented by Mr. William Hertrich, superintendent for Mr. H. E. Huntington, Los Robles Ranch. Received at the Plant Introduction Garden, Chico, Cal., January 11, 1911. Numbered January 23, 1911.

"This plant is an evergreen, fast-growing, broad-leaved vine. In my opinion it is the best climbing plant for this part of the country, as far as foliage is concerned." (*Hertrich.*)

Cuttings.

Distribution.—In mountainous ravines on the eastern side of Table Mountain and in the Uitenhage region of Cape Colony.

29409 and 29410. ANNONA SQUAMOSA L. Custard-apple.

From Paget Island, Bermuda. Procured by Mr. G. P. Wilder, Honolulu, Hawaii, from Miss Godet. Received January 24, 1911.

29409. Cuttings.

29410. Seeds.

29411 and 29412. GOSSYPIMUM HERBACEUM L. Cotton.

From Mesopotamia, Turkey. Presented by Mr. J. S. Levack, American vice and deputy consul, Bagdad, Turkey. Received January 16, 1911.

Seeds of the following:

29411. "*Luka.*"

29412. "*Iraki.*"

"The foregoing are the varieties of native cotton grown in Mesopotamia. They are cultivated to a very small extent and according to primitive methods. The varieties mentioned are considered to be a very inferior staple.

"In the opinion of experts (such as Sir William Willcocks, in charge of the irrigation works in Mesopotamia), this district will be one of the great cotton-producing areas of the world when the irrigation scheme is complete." (*Levack.*)

29413. BAUHINIA sp.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received January 23, 1911.

"A shrub 10 to 15 feet tall, with horizontal branches covered with pink flowers. The prettiest of the genus." (*Regnard.*)

NOTE.—This appears from the seeds to be the same as No. 26561, which was identified as *B. monandra* Kurz (?). (*Skeels.*)

29414 to 29417.

From Harput, Mamuret-ül-Aziz, Turkey. Presented by Mr. W. W. Masterson, American consul. Received January 12 and 16, 1911.

Seeds of the following:

29414 and 29415. ELAEAGNUS ANGUSTIFOLIA L.

Oleaster.

29414. Small fruited.

29415. Large fruited.

29416 and 29417. AMYGDALUS COMMUNIS L.

Almond.

29416. Sweet.

29417. Bitter.

"These almond trees seem to be possessed of a wonderfully hardy nature, as they flourish equally well in the low bottom land of the Euphrates River where the climate is very moderate or up in the mountain table-lands, where I have seen them growing at an altitude of 6,000 feet and where the thermometer registers below zero Fahrenheit for several weeks at a time.

"I can not say, however, concerning these almonds or the oleaster bushes, whether they will thrive in a locality where there is much rainfall in the summer or not, as in this country there is practically no rainfall from the middle of May until the first of November and irrigation is resorted to entirely. It seems to me that all of these varieties of seed would grow and mature in any part of our country south of the Potomac and Ohio rivers, particularly in the mountain sections of northern Georgia and Alabama, eastern Tennessee, western North Carolina, and southwestern Virginia, as that entire section of the country is almost identical in climate, soil, and rainfall with the highlands of Asia Minor." (*Masterson.*)

29418. CUCUMIS MELO L.**Muskmelon.**

From Port Said, Egypt. Presented by Mr. Michael A. Borg, United States Engineer Band, Washington, D. C. Received January 24, 1911.

"Local name of this melon is *Shammam*. It is a long type, sweeter than *Netted Gem*, with flesh that peels away from the skin. It is a summer melon planted in Port Said in March." (Borg.)

29419 to 29423.

From Rio de Janeiro, Brazil. Presented by Mr. Antonio Augusto Pereira da Fonseca. Received January 23, 1911.

Seeds of the following:

29419. ACANTHORIZA WARCZEVITZII Wendl. **Palm.**

Distribution.—Apparently native of Central America.

29420. COCOS ODORATA Rodr. **Palm.**

Distribution.—A palm native on the plains in the Province of Rio Grande do Sul, southern Brazil; cultivated at Rio de Janeiro.

29421. JESSENIA AMAZONUM Drude (?) **Palm.**

Distribution.—The eastern equatorial region of Brazil.

29422. CARYOTA SPECIOSA Hort. **Palm.**

29423. (Undetermined.)

"*Pitambo*. A fruit very agreeable and aromatic." (Fonseca.)

29424. RAVENALA MADAGASCARIENSIS Sonnerat.**Traveler's tree.**

From Palm Beach, Fla. Presented by Mr. J. B. Donnelly, Palm Beach Hotel. Received January 24, 1911.

The so-called traveler's tree is one of the most conspicuous semitropical plants. It grows to a height of 20 to 30 feet and is a near relative of the banana, resembling that plant somewhat in its leaves. It has a palmlike trunk with large leaves, crowded in two ranks so that the head has the form of a gigantic fan; suitable for planting in semitropical sections.

29425 and 29426. ARISTIDA PENNATA Trin.

From central Asia. Presented by Prof. A. Fischer von Waldheim, director, Imperial Botanic Garden, St. Petersburg, Russia. Received January 23, 1911.

Seeds of the following:

29425. Variety *karelini*. Grown in the sand near the railroad station at Farab. See No. 9582 for previous introduction.

29426. Variety *minor*. From Transcaspian Turkestan; grown on the sand dunes near the Repetek station of the central Asian railroad.

29427 to 29429. CAMPOMANESIA sp.**Guabiropa.**

From Itapeteninga, Sao Paulo, Brazil. Presented by Mr. Welman Bradford, chief of the commission of wheat-culture experiments. Received January 26, 1911.

Fruits of the following; quoted notes by Mr. Bradford:

29427. "Varietal name unknown."

29428. "Variety *pelluda*. Small fruited."

29429. "Grows wild in open undulating prairies."

29427 to 29429—Continued.

"The Guabiroba is very common and hardy, and in spite of the numerous fires bears abundantly. The bloom appears in October or November, and in a month the fruit is ripe. This has a slightly turpentine taste which is not unpleasant. The small varieties are especially agreeable."

29430 to 29450.

From Russia. Presented by Mr. J. A. Rosen, chief, American Agricultural Bureau of the Governmental Zemstvo of Yekaterinoslav, Russia, at Minneapolis, Minn. Received January 20, 1911.

Seeds of the following; quoted native names as given by Mr. Rosen:

29430 to 29436. CHAETOCLOA ITALICA (L.) Scribn. **Millet.**

29430. "*Chu-Miza Paidza.*"

29431. "*Mohar red Grushevka.*"

29432. "*Chu-Miza Khvan-Ianga.*"

29433. "*Chu-Miza Pane, Manchuria.*"

29434. "*Grushevka Chu-Miza.*"

29435. "*Kuzo Khunkjancho, Manchuria.*"

29436. "*Paigonza, Manchuria.*"

29437. Cicer arietinum L. **Chick-pea**
 "*Knout.*"

29438 and 29439. HELIANTHUS ANNUUS L. **Sunflower.**

29438. Oil. 29439. Giant.

29440. LATHYRUS SATIVUS L.

"*Chi-Na.*"

29441. LINUM USITATISSIMUM L. **Flax.**

"*Dolgunetz. For fiber.*"

29442 to 29444. PANICUM MILLACEUM L. **Proso.**

29442. "Yellow."

29444. "Black."

29443. "White."

29445. PHASEOLUS RADIATUS L.

"*Toza Luída, Manchuria.*"

29446. PHASEOLUS VULGARIS L. **Bean.**

"*Konjo Khvandra, Manchuria.*"

29447. TRITICUM POLONICUM L. **Polish wheat.**

"*Assyrian rye.*"

29448 to 29450. ZEA MAYS L. **Corn.**

29448. "*Khan-Boli.* Manchurian corn; has been grown for three years in the province of Yekaterinoslav."

29449. "*Pi-Boli.* Manchurian corn; has been grown for three years in the province of Yekaterinoslav."

29450. "*Grushevka.* One of the best-yielding corns in the province of Yekaterinoslav."

29451 to 29453. (Undetermined.)**Bamboo.**

From the vicinity of the city of David, Panama, at an altitude of 200 feet. Presented by Mr. Luis Alfaro, Subsecretario de Fomento, Panama. Received January 27, 1911.

"Plants of three varieties of unidentified bamboos indigenous to Chiriqui Province, Republic of Panama, according to information from the governor of the province of Chiriqui, who likewise informs us that the grass mentioned grows in all the hot regions of this province at heights which vary from the level of the sea to 300 meters, and at temperatures of 26° to 28° C., but always preferring the low humid spots of the coast.

"In the province of Chiriqui it is generally used in roofs of houses to lay over tiles, in barricades, pasture and farm gates, granaries, etc." (*I. I. Arosemena.*)

29454. DATURA FASTUOSA L.

From Villa Rica, Paraguay. Presented by Mr. C. Mahaux. Received January 20, 1911.

"This plant has mauve flowers from which the people here make cigarettes. It seems that it is a good antiasthmatic." (*Mahaux.*)

Distribution.—Throughout India, tropical Africa, and the Malay Archipelago; cultivated or a weed throughout the Tropics.

29455. MANGIFERA INDICA L.**Mango.**

From Oneco, Fla. Presented by Reasoner Bros., Royal Palm Nurseries, Oneco, Fla. Received at the Subtropical Garden, Miami, Fla., August 15, 1910. Numbered for convenience in recording distribution January 28, 1911.

Langra Benarsi. "Form oblong, oblique; cross section roundish, flattened; size very large; cavity regular, small, very shallow; suture medium wide; beak prominent; surface undulating; color watermelon green with marblings of lighter green; dots small, russet; bloom whitish; skin medium thick, tenacious; flesh yellow, tender, juicy, some fiber but not enough to interfere with spoon; seed flat, oval, cling, large; flavor acid; quality good for culinary purposes." (*W. N. Irwin.*)

29456. ANDROPOGON SCHOENANTHUS L.**Lemon grass.**

From Saigon, Cochin China. Presented by Mr. P. Morange, chief, Service of Agriculture. Received January 28, 1911.

"A plant known only in the cultivated state. It is grown in most tropical countries. The chief points of production are on the Malabar coast and in the Malay Peninsula near Singapore. This grass rarely blossoms and perhaps for this reason has been the subject of some botanical confusion. The herbage on distillation yields the so-called lemon-grass oil of commerce. The substance citral, having a lemonlike odor, is an important constituent of the oil, amounting to about 70 to 75 per cent thereof. The grass as well as the oil has a strong lemonlike taste and odor. This oil, together with citronella oil, distilled from a nearly related plant, is imported into this country in large quantities. They are used chiefly in perfumery products, soaps, and cosmetics and in other materials in which the agreeable odor is desired." (*R. H. True.*)

29457. SOLANUM TUBEROSUM L.**Potato.**

From Canary Islands. Presented by Messrs. Wildpret Bros., Puerto de Orotava, Teneriffe, Canary Islands. Received January 28, 1911.

"A red Irish potato, said to be grown as a summer crop on sandy land in the Canary Islands and to yield heavily." (*S. C. Hood.*)

29458 and 29459. CUCUMIS MELO L.**Muskmelon.**

From the Maltese Islands. Presented by Mr. James Oliver Laing, American consul, Malta. Received January 26, 1911.

Seeds of the following; quoted notes by Mr. Laing:

29458. "Seeds from one dark melon (winter), grown in the island of Gozo, one of this group. This particular melon is the finest specimen of the fruit I have seen here."

29459. "Seeds from several yellow melons (summer)."

"There are two varieties of the Malta melon: The winter or green variety and the summer or yellow kind. The winter type has a dark-green rind, more or less netted, but sometimes almost smooth. The average Malta melon, whether green or yellow, is much less netted than the average Rocky Ford melon in the United States. The winter variety is more oval than the summer variety. Both have a large circular crown at the place of the insertion of the flower. The pulp of the winter melon is white or cream colored; that of the summer melon ranges through various tints of pinkish orange. The pulp of both varieties has a delicate flavor, but not as rich and full as that of a good American muskmelon.

"The rind of both kinds is no thicker than that of an American muskmelon, but is much tougher and more resilient. A blow that would crush the rind of an American muskmelon would leave a Malta melon uninjured. This makes them an excellent shipping variety.

"Winter fruit selected and stored by experts is frequently eaten in January, having been plucked in the first weeks of September. This is exceptional, but fruit which has been kept a month or six weeks is served at the best hotels in Malta.

"The seeds of the summer variety are planted in March and the fruit matures in August. Those of the winter variety are planted in April and mature in September. At the end of the third week after germination the number of seedlings in each hole is reduced to one or two. When the fourth leaf has developed the point of the plant is nipped off. No instrument is used, as the point is tender and is simply pinched off between the thumb and finger. This has the effect of causing the plant to throw out lateral shoots. From the time of pinching off the points until the fruit is as large as an egg the plants are dusted two or three times with flowers of sulphur to prevent mildew.

"The fruit is formed on the lateral shoots caused by pinching off the point. The plant is not raised on a support, but trails along the ground. If the sun is particularly hot the fruit is protected by drawing leaves and branches over it and weighting it down with a stone. This is done especially with the winter or green melons. During the entire growing period the ground is kept free from weeds. The melons are seldom watered artificially except when they are grown on shallow or bad soil. Most of the rainfall of the year is in February. Comparatively little rain falls between the dates of planting and picking. Each plant is allowed to nourish not more than two melons. After gathering the crop the melons are stored in well-ventilated places and should not touch each other.

"Melons are grown in all kinds of soil here. Although Malta is only 17 miles long, there are several distinct kinds of soil. They all, however, contain a large proportion of carbonate of lime. In some cases this ranges as high as 90 per cent. The soil in this case is only broken particles of rock. Melons grow in all these varieties of soil. One reason, perhaps, is the presence of phosphates and alkalies owing to the close proximity of the underlying rock. There is little rain in Malta, but what there is, is conserved admirably in a stratum of blue clay, which is almost impervious to water."

(Laing.)

29460. CITRUS sp.**Mandarin.**

From Algiers, Algeria. Presented by Dr. L. Trabut. Received January 30, 1911.

"Mandarin of Canton. Hybrid of *Citrus nobilis*. Fruit bright colored; very sweet, ripens in January in Algiers." (Trabut.)

29461. ASPARAGUS sp.**Asparagus.**

From New York, N. Y. Purchased from J. M. Thorburn & Co. Received January 26, 1911.

Variety *scandens deflexus*.

Procured for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus and also various forms for florists' use.

29462. ASPARAGUS STIPULARIS Forsk.**Asparagus.**

From Tunis, North Africa. Presented by Mr. L. Guillochon, director, Jardin d'Essais de Tunis. Received January 28, 1911.

See No. 27163 for previous introduction.

Procured for the same breeding experiments as No. 29461.

29464 to 29470.

From Mexico. Presented by Dr. John Gifford, Cocoonut Grove, Fla., through Mr. Peter Bisset. Received January, 1911.

Seeds of the following; quoted notes by Dr. Gifford:

29464. BUNCHOSIA BIOCELLATA Schlecht.

"*Nanchi*."

Distribution.—The vicinity of Orizaba in southern Mexico.

29465. CRESCENTIA ALATA H. B. K.**Calabash tree.**

"This tree can be grown outdoors in extreme southern Florida and southern California. The outer skin of the fruit is removed and the seeds and pulp from within, and the hard woody shell is used for water gourds and for all sorts of domestic vessels, according to size and shape." (*Extract from Bailey's Cyclo-pedia American Horticulture*.)

Distribution.—Along the western coast of Mexico from Mazatlan to Acapulco and in Panama; introduced into the Philippine Islands.

29466. ICHTHYOMETHIA PISCIPULA (L.) Hitchcock.

Distribution.—Florida and Texas, and southward through Mexico and Central America to the vicinity of Guayaquil, Ecuador.

20467. PIPER NIGRUM L.**Pepper.**

See Nos. 5167 and 15681 for previous introductions.

29468. (Undetermined.) (Mimosaceæ.)

"A beautiful flowering leguminous tree."

29469. (Undetermined.) (Fabaceæ.)

"An ornamental shrub having racemes of golden-yellow papilionaceous flowers."

29470. (Undetermined.)

"An orange-colored fruit $\frac{1}{2}$ by 2 inches."

29471. NICOTIANA TABACUM L.**Tobacco.**

From Huatusco, Vera Cruz, Mexico. Presented by Dr. C. A. Purpus, Zacuapam, Huatusco, Vera Cruz, Mexico. Received January 28, 1911.

See No. 29091 for purpose for which introduced.

29475 and 29476. PISTACIA spp.

From Aintab, central Asiatic Turkey. Received through Mr. H. H. Bakkalian, secretary to Mrs. F. A. Shepard, January 23, 1911.

Seeds of the following; notes by Mr. Bakkalian:

29475. PISTACIA VERA L.**Pistache.**

"The common pistache exported from Turkey to America."

29476. PISTACIA TEREBINTHUS L.**Terebinth.**

"*Melengish*. This is used as a stock. The fruits are white when unripe and become gradually red. The small tree looks quite showy when covered with these red clusters; the bright red becomes darker and darker as the fruit grows riper. Some time after it is picked it takes the green color, which can be seen on the seeds shipped."

29477 to 29481.**Tobacco.**

From the Municipality of Rayones, Nuevo Leon, Mexico. Presented by Mr. Lauro Liadas, Director General of Agriculture, Mexico, who procured them from the Governor of the State of Nuevo Leon. Received January 31, 1911.

Seeds of the following:

29477 and 29478. NICOTIANA TABACUM L.**Tobacco.****29477. *Virginia*.****29478. *Criollo*.****29479 to 29481. NICOTIANA TRIGONOPHYLLA Dunal.****Wild tobacco.****29479. *Cimarron*.****29481. *Tabaquillo*.****29480. *Tabaco del Monte*.****29482 and 29483. COLOCASIA sp.**

From Canton, China. Presented by Mr. G. Weidman Groff, Canton Christian College. Received December 20, 1910.

Tubers of the following:

29482. "*Paak fu* (white). This variety has white flesh and grows to a height of about 2 feet. It is planted in January, and matures very early, which is worthy of note from the viewpoint of growing it in America. It is usually harvested in June and July. The shape of the tuber is round instead of egg shaped. This variety is probably more productive than the *Hung nga fu*." (Groff.)

"The entire petiole is light green in color." (R. A. Young.)

29483. "*Hung nga fu* (redbud). This is so called because the inside flesh shows signs of red. In very fertile soil it should reach a height of about 4 feet, and the taller the plant the better is the result, as the Chinese state it. This variety is good for food, being especially soft when cooked. It is planted in January and harvested as early as August. It is not nearly so productive as the *Bun leung fu*, yielding a crop perhaps a little more than half as large." (Groff.)

"The basal portion of the petiole is mottled with maroon. The margins of young leaves are also maroon." (R. A. Young.)

29484. CYPERUS PAPHYRUS L.**Papyrus.**

From Philadelphia, Pa. Presented by Mr. H. A. Dreer. Received February 1, 1911. Secured at the suggestion of Mr. Charles J. Brand for use in his paper-plant investigations.

"This sedge grows in Egypt, Abyssinia, and Asia Minor, growing 5 to 12 feet high. According to Mr. A. Aaronsohn, of Palestine, a specially large form grows in the lakes above the Dead Sea. In the making of the Egyptian papyri or rolls, the stems were split into long, thin bands which were arranged side by side on a hard, smooth surface. Another set of these bands or strips was then placed upon the first at right angles. The whole was then subjected to pressure, after which the sheet was rubbed smooth with ivory or other hard material. These sheets were then glued together at the ends to form rolls of the desired length. Ordinarily the cortex or outer layer of the stems did not go into the making of sheets but was used for making rough cordage.

"It is evident from the above that papyrus was not used to make paper in the modern sense in which the fibers are chemically digested or mechanically reduced to pulp and then formed into sheets from a thin, watery solution." (*Brand.*)

29485. MACHILUS NANMU (Oliv.) Hemsl.**Nanmu.**

From Yachow, West China. Presented by Mr. W. F. Beaman. Received February 3, 1911.

"This is a species of *Machilus*, a genus closely allied to *Laurus*, which grows to great size in western China. It is very highly esteemed by the Chinese on account of the great durability of its wood, which has been used for centuries by the Chinese in the construction of coffins. Owing to its scarcity a sufficient number of planks to construct a coffin often costs as much as a hundred dollars. The imperial palaces are said to be finished in this wood, and huge columns were brought at great expense to support the roof of the temple at the Ming tombs, north of Peking. It is worth careful experiments to find whether there are parts of the United States adapted to its culture. It might easily prove an important article of export if it can be propagated readily in this country." (*Walter T. Swingle.*)

See No. 28128 for previous introduction.

29486. DIOSPYROS LOTUS L.**Persimmon.**

From Tientsin, China. Presented by Dr. Yamei Kin. Received February 3, 1911.

"Seed of the seedling persimmon, sold on the market only in the dried-fig form. This wild persimmon is called *hei tsao* or *black tsao*, not a persimmon according to the fruit growers' classification here." (*Kin.*)

29488. VIGNA sp.

From China. Presented by Rev. J. M. W. Farnham, Shanghai, China. Received February 2, 1911.

"Seed of a wild pea found on mountains. The bloom is very fragrant." (*Farnham.*)
Seeds olive brown, mottled with black.

29489. NICOTIANA TABACUM L.**Tobacco.**

From Mexico. Presented by Mr. W. W. Mackie, director, Yaqui Valley Experiment Station, Esperanza, Sonora, Mexico. Received February 4, 1911.

"Native tobacco seed secured from the Yaqui Indians. This tobacco is called *Macuchi* and has been prized by the Mayos and Yaquis for centuries. The Mayos and Yaquis are branches of the same tribe living on rivers of the same names." (*Mackie.*)

29490. PELARGONIUM ODORATISSIMUM (L.) Ait. Rose geranium.

From Algeria. Presented by Mr. A. Mermier-Boyer, Chabet el Aneur, Algeria.
Received February 4, 1911.

Procured for the experiments of the Office of Drug-Plant Investigations with this plant for the production of oil.

Cuttings.

29491. JACARANDA sp.

From Parana, Argentina. Presented by Dr. A. M. Monsanto. Received February 4, 1911.

"This tree when in full bloom presents one of the most perfect and artistic clusters of lilac flowers the human eye might ever wish to behold. If I may judge, perhaps the most seasonable time for planting these seeds would be in the spring." (*Monsanto*.)

29493 to 29498.

From Usumbwa, Mwansa, German East Africa. Presented by the Usumbwa Co.
Received February 4, 1911.

Seeds of the following:

29493 to 29495. CAPSICUM ANNUUM L. Red pepper.

29493. Native large red.

29494. Native round yellow.

29495. Native round red.

29496. CROTALARIA SALTIANA Andrews.

See No. 24119 for previous introduction.

29497. PSIDIUM GUAJAVA L. Guava.

29498. GOSSYPIUM sp. Cotton.

"This is the species found everywhere in the interior and known to be cultivated by the natives for hundreds of years." (*Usumbwa Co.*)

29499. PISTACIA CHINENSIS Bunge. Pistache.

From China. Purchased through Mr. J. C. McNally, American consul, and Mr. Edgar Kopp, vice consul, Tsingtau, China, from Mr. Henry Cousens, Weih sien, China. Received at the Plant Introduction Garden, Chico, Cal., January, 1911.

"Introduced because of its great promise as a shade and ornamental tree. It promises to be hardy as far north as Washington, D. C., and its foliage colors up beautifully in autumn." (*David Fairchild*.)

29500 and 29501. TERMINALIA spp.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received February 4, 1911.

Seeds of the following; quoted notes by Dr. W. W. Stockberger:

29500. TERMINALIA ARJUNA (Roxb.) Wight and Arnott. Arjan.

"This species exists as a large deciduous tree, common throughout India. The timber is of some value. The bark serves as an Indian drug and has been used as a cardiac stimulant and tonic. From 8 to 16 per cent of tannin occurs

29500 and 29501—Continued.

in the bark, but the tannin content of the fruit is very low as compared with those species furnishing the myrobalans now largely imported into the United States."

Distribution.—Very common in the lower Himalayan regions of the north-western provinces of India, in the Dekkan and in Ceylon.

29501. *TERMINALIA BENTZOE* (L.) Pers.

"Synonyms, *Croton bentzoe* L.; *Terminalia angustifolia* Jacq.; and *T. benzoin* L. f. According to Dragendorff, this species, distributed throughout the East Indies, yields an aromatic resin which has a local use in medicine."

Distribution.—The central Malay Islands.

29502. MANGIFERA INDICA L.**Mango.**

From San Antonio de Los Banos, Cuba. Presented by Mr. J. D. Rose, at the request of Mr. C. F. Kinman, horticulturist, Porto Rico Experiment Station, Mayaguez, Porto Rico. Received February 6, 1911.

Manzana.

29503. HAPLOPHYTON CIMICIDUM DC.

From Mexico, Mexico. Presented by J. Labadie Successors. Received February 6, 1911.

"This is a Mexican plant, the decoction of the leaves of which has been used with success for the control of the orange fruit fly, *Trypeta ludens* Loew." (*Mr. F. A. Stockdale, Assistant Director and Government Botanist, Georgetown, British Guiana.*)

Distribution.—From southern Arizona southward through Mexico to Guatemala, and in Cuba.

29504 to 29513. MANGIFERA INDICA L.**Mango.**

From Poona, Bombay, India. Purchased from Mr. William Burns, economic botanist. Received November 17, 1910. Numbered February 7, 1911.

Plants of the following:

29504. *Mullgoa.*

29509. *Kala Alphonse.*

29505. *Borsha of Bhadgaon.*

29510. *Pairi.*

29506. *Gola Alphonse.*

29511. *Madras Mullgoa.*

29507. *Kavasji Patel.*

29512. *Ratnagiri.*

29508. *Batli.*

29513. *Alphonse.*

29514. ANNONA CHERIMOLA Miller.**Cherimoya.**

From Mexico, Mexico. Presented by Mr. G. P. Rixford, San Francisco, Cal., April 8, 1910, to the Plant Introduction Garden, Chico, Cal. Plants numbered for convenience in recording distribution February 7, 1911.

29515. AMYGDALUS COMMUNIS L.**Almond.**

From Nevada City, Cal. Procured from Mrs. George Dulac, Barren Hill Nursery. Received at the Plant Introduction Garden, Chico, Cal., January 31, 1911.

Jordan. See No. 7398 for description.

29517 to 29520.

From Paramaribo, Surinam. Presented by Mr. P. J. S. Cramer, Director of Agriculture. Received February 6, 1911.

29517 to 29520—Continued.

Tubers of the following:

29517. XANTHOSOMA sp.

Yautia.

Wittie (Wittie-taya). "Tubers of good size, smooth, elongated, and sometimes slender. Single tubers weigh as much as 14 ounces. They are nonacid, and when baked the flesh is very white and mealy, though quite firm. The flavor is mild." (R. A. Young.)

29518. COLOCASIA sp.

Dasheen.

Sinesie (Sinesie-taya). "Corms and tubers nonacid. Flesh of tubers very white when cooked, while that of the corm becomes slightly violet colored. Flavor inferior." (R. A. Young.)

29519 and 29520. ALOCASIA sp.

Alocasia.

29519. Egg (Eksi-taya). "Corms and tubers nonacid. Flesh yellow with whitish layer next to skin. When cooked the yellow flesh resembles the yolk of a hard-boiled egg and has also a slightly similar taste. The flavor is considered rather strong by some, but it is well liked by others." (R. A. Young.)

29520. Abo (Abo-taya). "Corms and tubers nonacid; flesh yellow. This variety is too coarse in texture and flavor for table use. It can be used for stock food." (R. A. Young.)

"The aroids grown here for table use are wet-land crops in so far as they need more moisture in the soil than sweet potatoes and yams. They prefer a sandy loam with a thick layer of humus on the top, while a light shade is beneficial to their growth. On pure sand they do not thrive as well as the sweet potatoes and yams unless the ground is thickly mulched and lightly shaded.

"The aroids are planted in Surinam the whole year through. They are never flooded, for during the greater part of the year sufficient moisture is kept in the soil by the rains, and in the three very dry months (September, October, and November) fresh water for irrigation purposes generally is not available in the cultivated part (the coast lands) of Surinam.

"The *Sinesie* variety can be reaped after five to nine months. As a table vegetable the *Wittie* variety is by far the best. It cooks perfectly white and is very similar to a good potato. The *Egg* is not so good, while the *Sinesie* is regarded as a rather poor table vegetable, becoming soft and slimy when cooked." (Cramer.)

29521. SAMUELA CARNEROSANA Trelease.

From Guajardo, about 25 miles west of Saltillo, Mexico. Procured by Mr. Thomas W. Voetter, American consul, Saltillo. Received February 8, 1911.

"I have been informed that the buds or flower stalks of this 'palm' are used for food, being taken just before the flower opens, and cooked in the same manner as young squash. The flowers themselves are also cooked and eaten. The covering of the mature fruits is also eaten, having much the same flavor as the eastern date.

"From the leaves of this same tree is obtained a fiber which forms the bulk of the 'Ixtle' fiber exported from this consular district." (Voetter.)

Distribution.—Northeastern Mexico from the Carneros Pass to Catorce and Cardenas.

29523 and 29524. CANNABIS SATIVA L.

Hemp.

From China. Presented by Mr. E. H. Wilson, Arnold Arboretum, Jamaica Plain, Mass. Received February 8, 1911.

29523 and 29524—Continued.

Seeds of the following, quoted notes by Mr. Wilson:

29523. "*Hoa ma*. This is perhaps the most important fiber-producing plant in western China. It is cultivated extensively as a winter crop on the Chengtu Plain, especially around the cities of Wen Chiang Hsien and Pi Hsien. The fiber is used for making coarse cloth, cordage, etc., and is also largely exported to other parts of China, via Chungking and Ichang."

29524. "*Man ma*. This is cultivated as an autumn crop in the mountains west of Kwanhsien, between 3,000 and 5,000 feet. The fiber is apparently used only locally by the peasants."

29525. NICOTIANA TABACUM L.**Tobacco.**

From Medan, Dutch East Indies. Presented by Mr. J. G. C. Vriens, director, Deli-Proefstation. Received January 28, 1911.

Deli. "This variety is very susceptible to the Granville tobacco-wilt disease." (Vriens.)

29526. (Undetermined.) (Orchidaceæ.)**Orchid.**

From Canal Zone, Panama. Collected by Prof. H. Pittier, of the Bureau of Plant Industry. Received February 9, 1911.

Plant.

29527 and 29528. NICOTIANA TABACUM L.**Tobacco.**

From Huimanguilla, Tabasco, Mexico. Presented by Mr. A. G. Weiss. Received February 6, 1911.

Seeds of the following; quoted notes by Mr. Weiss:

29527. "Seed from which this lot was grown was obtained from Valle National, Mexico. The dealer from whom I procured this variety is experimenting with it in order to find a native tobacco which will produce a better wrapper than the local tobacco."

29528. Seed from Huimanguilla section.

29529. (Undetermined.) (Zinziberacæ.)**White ginger.**

Grown near Tsinan, Shantung, China. Presented by Rev. H. W. Luce, Shantung Christian University, Wehsien, China. Received February 8, 1911.

"This light-colored variety, so far as I can find out, is grown in sandy soil." (*Luce.*)

Introduced for the purpose of trying ginger culture in more northern latitudes of the United States than has heretofore been attempted.

29530. LAWSONIA INERMIS L.**Henna.**

From Culebra, Canal Zone, Panama. Presented by Mr. Alfred D. Dyer. Received February 8, 1911.

See No. 25776 for description.

29531. QUERCUS SUBER L.**Cork oak.**

From the Almoraima cork woods, Spain. Procured by Mr. R. L. Sprague, American consul, Gibraltar, Spain. Received February 10, 1911.

29532. PASSIFLORA sp.**Passion flower.**

From Mollendo, Peru. Presented by Mr. William Morrison, acting consular agent. Received February 11, 1911.

"The owner of the 'tree' from which this seed was procured does not know where he got the original seed, but is inclined to believe that he received it from Tacna." (*Morrison.*)

29533. PASANIA CUSPIDATA (Thunb.) Oersted. Evergreen-oak.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co., at the suggestion of Dr. B. T. Galloway. Received February 8, 1911.

"One of the most striking and beautiful hedges of this district (Sagami) is made from this evergreen-oak. At first I thought they were camphor, so striking were the young leaves. The plant readily adapts itself to any kind of training and seems to stand a lot of rough treatment. The imperial railroad is now using it a great deal for hedges. It would be hardy south of Norfolk, Va., and should also do well along the Pacific coast from Chico, Cal., northward." (*Galloway*.)

See No. 17510 for previous introduction.

Distribution.—The provinces of Kiangsu, Kiangsi, and Kwangtung, China, in Formosa and Nansei Islands, and in Japan, Chosen (Korea), and the Korean Islands.

29534. PHYLLOSTACHYS AUREA A. and C. Riviere. Bamboo.

Presented by Mr. James Coey, Ardeen, Larne, Ireland. Received May 19, 1910, and forwarded to the Plant Introduction Garden, Chico, Cal. Numbered for convenience in recording distribution February 13, 1911.

See No. 9052 for description.

29535 and 29536. ANDROPOGON spp.

From Heneratoda, Ceylon. Presented by J. P. William & Bros. Received February 13, 1911.

Plants of the following:

29535. ANDROPOGON SCHOENANTHUS L. Lemon grass.

See No. 29456 for previous introduction.

29536. ANDROPOGON NARDUS L. Citronella grass.

Distribution.—Throughout tropical Asia, Africa, and Australia.

29537 and 29538.

From Wellington Point, near Brisbane, Queensland, Australia. Presented by Mr. James Pink. Received February 13, 1911.

Seeds of the following:

29537. ATALANTIA GLAUCA (Lindl.) Hook. f. Australian desert lime.

"This is one of the most interesting of all citrus fruits and one which curiously enough, has never yet received adequate attention from botanists or horticulturists. It was first mentioned in 1847 by Ludwig Leichhardt, the German explorer, to whom we owe much of our knowledge concerning the interior of the deserts of northeastern Australia. It is a shrub or small tree 12 to 15 feet high, with a trunk 2 to 6 inches in diameter. It has small but thick leathery leaves of gray-green color, and one is struck by the scantiness of the foliage. The flowers are small and the fruits about a half inch in diameter. An agreeable beverage is made from the acid juice and a fair preserve may be made out of the fruit. The peel has the sweetish flavor of the kumquat. It is known in Australia as the native lemon. The plant was described botanically as *Tripasia glauca* Lindley in a footnote to Lieut. Col. Thomas Livingston Mitchell's 'Journal of an Expedition into the Interior of Tropical Australia in Search of a Route from Sydney to the Gulf of Carpentaria,' London, 1848. This species was based on specimens collected on October 17, 1846, between camps XXXII and XXXIII, near the juncture of the Maranoa and Merevale rivers, in the southern limit of Queensland, latitude 26° S. Decidedly cold weather was encountered near this point, in some cases the ice being so thick that it had to be broken in the morning before the horses could drink. It

29537 and 29538—Continued.

seems quite probable from this that the plant grows in a region where the temperature occasionally falls to 10° F., and in rare cases nearly to zero. It is the hardiest of all evergreen citrus fruits and is very promising for use in breeding new and hardy types. Not only has it highly developed ability to withstand cold, but it is very likely to have the even more desirable quality of being able to withstand occasional spells of hot weather in winter, a quality usually possessed by desert plants. It is not at all improbable that it can be utilized in its present form in many parts of Arizona, as well as in some parts of southern Utah, Nevada, and southern Oregon. It is obviously drought resistant, a point of the greatest interest, both botanically and agriculturally, and its introduction into the United States will undoubtedly lead to the inauguration of a new era in the breeding of citrus fruits." (*W. T. Swingle.*)

Distribution.—In the valleys of the Maranoa, Suttor, and Burdekin Rivers, and Broad Sound and Port Denison in the Province of Queensland, Australia.

29538. PASSIFLORA EDULIS Sims.**Passion flower.**

"This is a great improvement on any we have here. Its history follows: We have two varieties of passion fruit, and working on the Darwinian theory that crossing varieties revitalizes the offspring, I crossed the two varieties two years ago, and the fruit from which these seeds were taken is the result of the cross." (*Pink.*)

29539. DIOSCOREA sp.**Yampie.**

From Gatun, Canal Zone, Panama. Presented by Lieut. Col. William F. Sibert. Received February 9, 1911.

"The pink-fleshed yampie, of Panama, which is considered by the natives as one of the choice tuberous-rooted vegetables. The growing plant resembles in general appearance the ordinary white yams of the Tropics, but it is not of as vigorous growth as these. Some of the tubers will be grown at the Plant Introduction Garden at Brooksville, Fla., for later distribution." (*H. F. Schultz.*)

29540. DIOSCOREA sp.**Yampie.**

From Culebra, Canal Zone, Panama. Presented by Mr. Alfred D. Dyer. Received February 8, 1911.

"This is the pink-skinned yampie, which differs in appearance of both tubers and foliage from the pink-fleshed variety (No. 29539). It is grown quite extensively throughout Central America and forms a very appetizing dish prepared in many ways similar to the ordinary white potato, which it is generally conceded to excel in flavor by Americans and Europeans. The same disposition has been made of these tubers as of the preceding number." (*H. F. Schultz.*)

29629. CITRUS sp.**Orange.**

From Gan Doo Awn, Mawmai State, Southern Shan States, Burma. Collected by Rev. H. C. Gibbens, M. D., American Baptist Shan Mission, Monghai, Southern Shan States, Burma. Presented by Mr. Oglesby Paul, Fairmount Park, Philadelphia, Pa., through Mr. Edward Simmonds, Subtropical Garden, Miami, Fla. Received February 13, 1911.

"These seeds are from the best variety of orange grown in Burma. The rind comes off very easily and is not adherent to the fruit itself. I have never tasted any American oranges that could approach anywhere near to their flavor. Their natural habitat is a very warm lowland. They will not grow in Monghai." (*Gibbens.*)

29630. ALEURITES FORDII Hemsl. China wood-oil tree.

From Audubon Park, New Orleans, La. Presented by Mr. Sam Marshall, superintendent. Received February 3, 1911.

Possibly grown from No. 13104. See this number for description.

Seeds.

29631. BELOU MARMELOS (L.) W. F. Wight. Bael.

From Rangoon, Burma. Received through Mr. R. S. Woglum, explorer, Bureau of Entomology, United States Department of Agriculture, February 15, 1911.

See No. 24450 for description.

29632. NICOTIANUM TABACUM L. Tobacco.

From Cuernavaca, Mexico. Presented by Sr. Guillermo Gándara, through Mr. W. E. Safford, Bureau of Plant Industry. Received February 14, 1911.

A wild variety.

29633. OPUNTIA FICUS-INDICA (L.) Miller. Prickly pear.

From Jerusalem, Palestine. Presented by Mr. E. F. Beaumont, of the American colony. Received February 17, 1911.

"This variety has scarcely any spines, and those existing are only from one-eighth to one-fourth of an inch long and so inoffensive as to be eaten readily by cattle, singeing not being necessary." (*Beaumont.*)

"This is one of the many forms commonly grown in the Mediterranean region of the three continents. It is a rapid grower and spineless enough to be fed to stock without singeing. It will be grown for study, but probably has no advantage over forms we already have." (*David Griffiths.*)

29634 to 29638. VITIS VINIFERA L. Grape.

From Besni, in the Deyarbekir Valley, Turkey. Procured by Mr. William W. Masterson, American consul, Harput, Mamuret-ül-Aziz, Turkey. Received February 17 and 18, 1911.

Cuttings of the following:

29634. Black raisin.

29637. Black wine.

29635. White raisin.

29638. White wine.

29636. Red raisin.

See No. 26566 for previous introduction of grapes from this locality.

29639. SACCHARUM OFFICINARUM L. Sugar cane.

From Sidzuoka, Japan. Presented by Prof. Y. Kozai, director, Imperial Agricultural Experiment Station, Nishigahara, Tokyo, Japan. Received at the Plant Introduction Garden, Chico, Cal., February, 1911.

See No. 28193 for purpose for which introduced.

Cuttings.

29640. CITRUS sp. Orange.

From Villa Encarnación, Paraguay. Presented by Mr. C. F. Mead. Received February 18, 1911.

"*Naranga Imberni*, sometimes called *Naranga sin tiempo*, or in English, 'orange without time or season.' This is distinctive in that the fruit ripens at all times of

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29640—Continued.

the year, in some parts early and in other parts late. In this section, Villa Encarnación, the oranges are ripe early in January, whereas the regular orange season here is from May to December, though few good oranges are found after October." (Mead.)

29641. CYTISUS MADERENSIS (Webb. and Berth.) Masf.

From the island of Palma. Presented by Dr. George V. Perez, Puerto de Orotava, Teneriffe. Received February 17, 1911.

"A native fodder shrub of great value and at the same time a very ornamental plant. It comes from the same island of Palma as the tagasaste (*Cytisus proliferus* L., No. 28827), and from time immemorial both have been used there for the rearing of cattle and horses.

"I venture to suggest sowing a plat in a suitable climate like California or Florida and keeping the plants for the supply of seed, which is difficult to procure.

"The mistake made about these cytisi when grown for forage is that they are allowed to grow to the size of large bushes or small trees, whereas they ought to be cut back, when they will pollard two or three times in the course of a year.

"They are quite as nutritious as lucern and very drought resistant. In these islands they grow best at an altitude of 2,000 to 4,000 feet, but they will also grow by the coast. It ought to have a great future in California." (Perez.)

Seed.

Distribution.—The Canary, Cape Verde, and Madeira islands.

29642. STATICE ARBOREA Broussonet.

From Puerto de Orotava, Teneriffe. Presented by Dr. George V. Perez. Received February 17, 1911.

"This plant has a very vigorous growth. Although it has not been used as a forage plant, the avidity with which goats eat it and the resistance to salt in the soil would make it worth while to make experiments with it.

"The home of this plant was for many years two large maritime rocks entirely surrounded by the sea. From these rocks this plant disappeared, owing to goats having been placed there some 25 years ago to find their food, and it was supposed to be lost to botany until I had it rediscovered by a goatherd in some precipitous rocks on this island in 1906. I beg to refer you to an article in the Annals of Botany, vol. 20, no. 78, Apr., 1906, by Dr. Otto Stapf, of the Herbarium, Kew; also Annals of Botany, vol. 22, no. 85, Jan., 1908, pp. 115 and 116, by the same Dr. Otto Stapf." (Perez.)

29649 to 29652. PRUNUS sp.**Plum.**

From Teneriffe, Canary Islands. Presented by Mr. Ross J. Hazeltine, American vice consul. Received February 18, 1911.

Cuttings of the following (quoted notes by Mr. Hazeltine):

29649. "Dark-red plum; red skin and meat."

29650. "Red plum; red skin and yellow meat."

29651. "White plum."

29652. "Yellow plum with red meat."

29653. VITIS VINIFERA L.**Grape.**

From Kiayingchau, China. Presented by Mr. George Campbell. Received February 20, 1911.

"Cuttings of the alleged seedless grape. About a year ago I obtained a very dubious-looking piece of the vine which I cut up and planted. I got one good vigorous plant out of the lot and from it took the cuttings which I am sending you. It

29653—Continued.

has been difficult to find out about this vine. I could not get any of the fruit this year and do not know how valuable it may be. Some say it is seedless and others that it has very few seeds. It has a reputation locally, and for some reason it is hard to get cuttings from it. I am not even sure that my cuttings came from the vine described." (*Campbell.*)

29654. NICOTIANA TABACUM L.**Tobacco.**

From Zacuapam, Huatusco, Vera Cruz, Mexico. Presented by Dr. C. A. Purpus. Received February 15, 1911.

See No. 29091 for purpose for which introduced.

29655. ERYTHRINA CRISTA-GALLI L.

From Cahi Puente, Paraguay. Presented by Mr. C. F. Mead. Received February 18, 1911.

"This plant is called *Ceibo* in Spanish; it may be of some use as an ornamental shrub or small tree. Its usual habit of growth is as a shrub, but by pruning it can be trained into a tree growing to a height of 5 meters. It is a deciduous perennial, flowering every spring, the flowers being large spike clusters 10 to 18 inches long and of a rich dark-red color. It flowers very profusely and to my mind is very beautiful. The branches are very pithy and are used to some extent as a substitute for cork. The roots are also pithy, and it is from them that the 'genuine Paraguay razor hones' are made. It will stand frost equal to tomato vines." (*Mead.*)

29656 and 29657. PASSIFLORA spp.**Passion flower.**

From Mexico. Procured by Mr. Clarence A. Miller, American consul, Tampico, Mexico, from Mr. G. F. Preston, Tamos, Vera Cruz, who obtained them from Dr. F. Foex, director, Estacion Agricola Experimental, Oaxaca. Received February 16, 1911.

Seeds of the following:

29656. PASSIFLORA sp.

29657. PASSIFLORA DICTAMO DC.

"The *Itamo real* is not an edible Passiflora, but in Mexico is valued very highly for its medicinal qualities. Its fruit is small, juicy, of dark-brown, nearly black, color, and full of small seeds. The flowers are small and not very pretty, but the leaves are noted for their sloping form or shape and for the glands with which they are provided." (*Foex.*)

29658 and 29659. QUERCUS SUBER L.**Cork oak.**

From Lisbon, Portugal. Presented by Companhia das Lezirias do Tejo e Sado. Received February 18, 1911.

Seeds of the following:

29658. "Bastão. Seeds of the preceding year, developing on the tree throughout a whole year, and generally thought to be more productive."

29659. "Lande. Acorns of ordinary production, of this year's fruit, also of very good quality, and of great reproductive value."

29660. ATALANTIA GLAUCA (Lindl.) Hook. f.**Australian desert lime.**

From the Condamine River, 12 miles from Chinchilla railroad station, 220 miles from Sunnybank, Australia. Presented by Mr. John Williams, Sunnybank, near Brisbane. Received February 21, 1911.

29660—Continued.

"These trees do not grow in swamps, but on nice, sweet soil near the river and where frosts are sharp. They grow where the orange tree would be frozen in winter." (Williams.)

See No. 29537 for previous introduction.

29715 to 29723.

From Canal Zone, Panama. Collected by Mr. William R. Maxon, United States National Museum. Received February 18, 1911.

Plants of the following:

29715 to 29722. (Undetermined.) (Orchidaceæ.) **Orchid.**

(Maxon's Nos. 4720 to 4727.) These were collected on tree trunks in the vicinity of Frijoles, Canal Zone; altitude, 35 to 100 feet.

29723. *ELAPHOGLOSSUM HERMINIERI* (Bory and Fee) Moore.

(Maxon's No. 4649.) Collected on a fallen tree trunk in the hilly forest around Agua Clara reservoir, near Gatun, Canal Zone; altitude 70 to 100 feet.

29724. (Undetermined.) (Orchidaceæ.) **Epiphytic orchid.**

From near Frijoles, Canal Zone, Panama; altitude 35 to 100 feet. Collected by Prof. H. Pittier, Bureau of Plant Industry. Received February 18, 1911.

(Pittier's No. 2683.)

29725 and 29726. *MAGNOLIA CAMPBELLII* Hook. f. and Thoms.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received February 21, 1911.

Seeds of the following:

29725. From tree bearing red flowers.

29726. From tree bearing white flowers.

29727 and 29728.

From Egypt. Presented by Mr. D. S. Fish, secretary, Alexandria Horticultural Society, Alexandria, Egypt. Received February 20, 1911.

29727. *SACCHARUM OFFICINARUM* L.

Sugar cane.

"*Beledi* sugar cane. This has been cultivated in Egypt for centuries. It is highly esteemed by the natives for eating out of hand." (Fish.)

Cuttings.

29728. *IPOMOEA BATATAS* (L.) Poir.

Sweet potato.

"*Beledi* sweet potato. This was probably brought to Egypt from Spain." (Fish.)

Tubers.

29729 and 29730. *ROSA* spp.

Rose.

From Lisbon, Portugal. Presented by Mr. Ch. D'Navel, inspector, Botanic Gardens. Received February 21, 1911.

Cuttings of the following hybrids of *Rosa gigantea*:

29729. *Belle Portugaise*.

29730. *Étoile du Portugal*. A hybrid of *Rosa gigantea* and *Reine Marie Henriette*.

29830. NICOTIANA TABACUM L.**Tobacco.**

From Mexico. Presented by Mr. Thomas W. Voetter, American consul, Saltillo, Mexico. Received February 18, 1911.

"Tobacco of an unknown variety, formerly grown at Congregacion del Rosario, Monclova, about 120 miles northwest of Saltillo. The firm of Damaso Rodriguez, who obtained this seed from their correspondents at Congregacion del Rosario, stated that tobacco had not been grown for sale in the Monclova region for several years, and that the last lot they had purchased was about four or five years ago. This last lot also was not of good quality, as the growers did not know how to cure the leaf." (Voetter.)

29831. MELILOTUS INDICA (L.) Allioni.**Melilot.**

From Zafarwal, India. Presented by Mr. H. S. Nesbitt, American Mission. Received February 21, 1911.

"This is the plant called *Sinji* in the Punjab. As far as I have observed, the blossoms are yellow." (Nesbitt.)

29832. CARICA PAPAYA L.**Papaya.**

From Monghai, Southern Shan States, Burma. Collected by Rev. H. C. Gibbens, M. D., American Baptist Shan Mission. Presented by Mr. Oglesby Paul, Fairmount Park, Philadelphia, Pa. Received February 23, 1911.

"This fruit grows everywhere in Burma and is very wholesome and pleasant. These seeds were from fairly large and good-tasting fruits raised in Monghai." (Gibbens.)

29833. XANTHOSOMA sp.

From Estero, Fla. Presented by The Koreshan Unity. Received February 23, 1911.

"Received under the name *Cuban malanga*. The tubers are of good size, weighing as much as 3 to 4 ounces. When baked the flesh is very white and mealy and of excellent flavor." (R. A. Young.)

29834. CANNABIS SATIVA L.**Hemp.**

From Mokanshan, China. Procured from Mr. Robert J. Felgate. Received February 2, 1911.

29835 and 29836. DACTYLIS GLOMERATA L.**Orchard grass.**

From The Plains, Va. Grown by Mr. John McGill, jr., from selections made by Mr. R. A. Oakley on the farm of Mr. E. H. Moore, Lexington, Va. Received February 21, 1911.

Seeds of the following:

29835. (Agros. No. 453.)

29836. (Agros. No. 454.)

These selections were made for their special forage qualities.

29837. PRUNUS sp.**Plum.**

From Teneriffe, Canary Islands. Presented by Mr. Ross J. Hazeltine, American vice consul. Received February 24, 1911.

NOTE.—Supposed to contain some or all of the varieties listed under Nos. 29649 to 29652.

29839. VITIS sp.**Grape.**

From Mokanshan, China. Presented by Mrs. Annie Andersen, "Ruthville," Mokanshan, via Shanghai, China, at the request of Mr. Alexander Kennedy, Dongsi, China. Received February 23, 1911.

"Seed from wild grapevines I transplanted into my own garden." (*Andersen.*)

29840. COLOCASIA sp.**Dasheen.**

From Hilo, Hawaii. Presented by Mr. F. A. Clowes, superintendent, Hilo and Olaa Substation, Hawaii Agricultural Experiment Station. Received February 27, 1911.

Royal Black or *Lehua Ele-ele*. "The term 'Royal Taro' should, I believe, be applied to a class of taros and not to any one variety. All the dark-fleshed taros were, I am told, taboo to the common people, and were only eaten by and grown for the chiefs. The Lehuas, of which there are two, the Black or Ele-ele and the White or Keo-keo, are only two of this class. I understand that the distinctive mark of the Lehua is the dark-purple ring at the junction of the corm and the leafstalk." (*Clowes.*)

29879. MOMORDICA BALSAMINA L.

From Pretoria, South Africa. Presented by Prof. J. Burt Davy, Government agrostologist and botanist, Department of Agriculture. Received February 25, 1911.

"Seeds of an ornamental cucurbit. The flowers are inconspicuous, but the tubercled fruit is a beautiful deep orange, the seeds being covered with deep-red, fleshy arillus. It may do in warm parts of the country with a wet summer climate." (*Davy.*)

Distribution.—Throughout tropical Asia, the Malay Archipelago, Australia, and Africa, and cultivated in tropical America.

29880. BROMUS INERMIS Leyss.**Brome-grass.**

From Bellefourche, S. Dak. Grown by Mr. A. C. Dillman, Bureau of Plant Industry. Received February 27, 1911.

"This strain of brome-grass first attracted attention in 1904 at the South Dakota Agricultural Experiment Station, Brookings, S. Dak., where it has been planted in a small plat. It appeared to be extremely vigorous, producing a large quantity of forage and seed. Previous records of the origin of this stock had been lost, but it was listed by Prof. W. A. Wheeler, then botanist of the South Dakota station, as South Dakota No. 26. A part of this seed was planted at the Highmore Substation in 1905, and part of the seed of the 1907 crop was planted at the U. S. Agricultural Experiment Farm, Newell, S. Dak., in 1909, in order to make further selections. This strain is generally characterized by the light color of the panicles. Close study shows that it is not a very uniform type, but it appears to be superior to the ordinary run of commercial seed." (*T. H. Kearney.*)

29881. PINUS PINASTER Soland. 1789.**Pine.**

(*Pinus maritima* Poir. 1804.)

From Naples, Italy. Purchased from Dammann & Co., through Mr. Stuart J. Fuller, vice consul in charge. Received February 27, 1911.

See No. 1736 for previous introduction.

29884 to 29887.

From Japan. Purchased from the Yokohama Nursery Co. Received February 8, 11, and 23, 1911.

29884 to 29887—Continued.

Tubers of the following:

29884 and 29885. *DIOSCOREA* spp.

29886. *SAGITTARIA SAGITIFOLIA* L.

See Nos. 21650 and 21651 for previous introductions.

29887. *IPOMOEA BATATAS* (L.) Poir.

Sweet potato.

29888. (Undetermined.) (Orchidaceæ.)

Epiphytic orchid.

From the forests of Juan Diaz, near Panama, Panama; altitude, 20 to 50 meters.

Collected by Prof. H. Pittier, Bureau of Plant Industry. Received February 24, 1911.

Flowers pale yellow. (P. No. 2552.)

29889 to 29905.

From Canal Zone, Panama. Collected by Mr. William R. Maxon, United States National Museum. Received February 24, 1911.

Plants of the following:

29889. *ONCIDIUM* sp.

Found growing 8 to 15 meters up in a large tree along an old trail above the reservoir, 1 to 3 miles from Gorgona, Canal Zone; altitude, 40 to 150 meters (M. No. 4752.)

29890. *EPIDENDRUM* sp. (?)

Found growing in a large tree in the same locality as No. 29889. (M. No. 4753.)

29891. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk on the banks of the Chagres River, below Gatun, Canal Zone, near sea level. (M. No. 4800.)

29892. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk in the same locality as No. 29891. (M. No. 4801.)

29893. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk in the forest along the Rio Indio de Gatun, Canal Zone, near sea level. (M. No. 4814.)

29894. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk in the same locality as No. 29893. (M. No. 4825.)

29895. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk in the same locality as No. 29893. (M. No. 4828.)

29896. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk in the same locality as No. 29893. (M. No. 4829.)

29897. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk in the same locality as No. 29893. (M. No. 4830.)

29898. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk in the same locality as No. 29893. (M. No. 4831.)

29899. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk on the banks of the Chagres River, below Gatun, Canal Zone; near sea level. (M. No. 4836.)

29900. (Undetermined.) (Orchidaceæ.)

Orchid.

Found on a tree trunk in the same locality as No. 29899. (M. No. 4837.)

29889 to 29905—Continued.**29901. BROMELIA sp.**

Found on a large tree trunk in the same locality as No. 29889. (M. No. 4754.)

29902. PHYLLOCACTUS sp.

Found on a tree trunk in the same locality as No. 29893. (M. No. 4832.)

29903. ELAPHOGLOSSUM sp.**Fern.**

Found on a large tree trunk in the same locality as No. 29893. (M. No. 4833.)

29904. ELAPHOGLOSSUM HERMINIERI (Bory and Fee) Moore.

Found on a tree trunk in the same locality as No. 29893. (M. No. 4834.)

29905. NYMPHAEA sp.**Water lily.**

Found in a pond west of the Chagres River, opposite Bohio, Canal Zone; altitude 20 to 40 meters. (M. No. 4779.)

29906. (Undetermined.) (Orchidaceæ.)**Orchid.**

From Mandingo Valley, Canal Zone, Panama. Collected by Prof. H. Pittier, Bureau of Plant Industry. Received February 24, 1911.

(P. No. 2716.)

29907. STIZOLOBIUM sp.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received February 27, 1911.

This was received under the name *Mucuna capitata*.

29908. ZEA MAYS L.**Corn.**

From Kweichow, West China. Presented by Rev. J. M. W. Farnham, Shanghai, China. Received February 27, 1911.

"This is a small variety, probably suitable for New England. I am not aware that it possesses any special advantage over other varieties." (*Farnham.*)

29910. GOSSYPIUM NANKING Meyen.**Cotton.**

From Hwai Yuan, China. Presented by Dr. Samuel Cochran, American Presbyterian Mission. Received February 24, 1911.

Procured for breeding purposes.

29911 to 29917. MEDICAGO spp.

From Palestine. Presented by Mr. John E. Dinsmore, American Colony, Jerusalem, Palestine. Received February 14, 1911.

Seeds of the following:

29911. MEDICAGO BLANCHEANA Boiss.

From Jerusalem. "(No. 2707.)"

29912. MEDICAGO CORONATA (L.) Gaertn.

From Jerusalem. "(No. 2636.)"

Distribution.—The countries bordering on the Mediterranean from Spain to Persia, and in northern Africa.

29913. MEDICAGO FALCATA L.**Siberian alfalfa.**

From Jerusalem. "(No. 806a.)"

29914. MEDICAGO LITTORALIS Rohde.

From Jaffa. "(No. 1382.)"

Distribution.—The countries bordering on the Mediterranean from Spain to Syria, and in northern Africa, the Canary Islands, and Madeira.

29911 to 29917—Continued.**29915. MEDICAGO MARINA L.**

From Jaffa. "(No. 3076.)"

Distribution.—Along the northern coast of the Mediterranean from Spain, southwestern France, and Italy, through the Balkan Peninsula, Asia Minor, and Syria, to Palestine; also in northern Africa.

29916. MEDICAGO ROTATA Boiss.

From Jerusalem. "(No. 8701.)"

Distribution.—On hillsides and in cultivated places in the vicinity of Gaza and on the plain of Damascus in Palestine, and Mesopotamia.

29917. MEDICAGO TRUNCATULA BREVIACULEATA Urb.

From Mizpeh (?). "(No. 2964.)"

Distribution.—Spain, southern France, Sardinia, Sicily, and northern Africa.

29918 and 29919.

From Mexico. Presented by Mr. Edward Everest, "La Candelaria," Tlaco-
talpan, Vera Cruz, Mexico. Received February 28, 1911.

Seeds of the following:

29918. NICOTIANA TABACUM L.

Tobacco.

29919. ANNONA sp.**29921. PRUNUS sp.**

Cherry.

From Tokyo, Japan. Presented by Dr. T. Watase, The Tokyo Plant, Seed, and
Implement Co. Received March 1, 1911.

"*Oshima Sakura*. The fastest growing variety of cherry trees, the wood of which is
valued for fuel and charcoal." (*Watase*.)

"In Japan, where the charcoal fire is a great feature of the home life, prizes are
given by horticultural societies for the most beautifully burning charcoal." (*David
Fairchild*.)

29922. PHOENIX DACTYLIFERA L.

Date.

From Basra, Arabia. Purchased from The Hills Bros. Co. Received March 1,
1911.

Different varieties to be grown for selection purposes

29923 to 29979.

From Kew, England. Presented by Dr. David Prain, director, Royal Botanical
Gardens. Received January 28, 1911.

29923 to 29956. Seeds of herbaceous perennials:

29923. BETA BOURGAEI Coss.

Distribution.—Along the damp sandy coasts in the Province of Cadiz,
southern Spain.

29924. BETA TRIGYNA Waldst. and Kit.

See No. 21095 for previous introduction.

Distribution.—Hungary and the Caucasus region in southern Europe,
Asia Minor, and in Armenia.

29925. CICER ARIETINUM L.

Chick-pea.

29926. CICER PINNATIFIDUM Jaub. and Spach.

29923 to 29979—Continued.

Distribution.—Open and wooded hillsides in Asia Minor and Syria.

29927. *CLEMATIS INTEGRIFOLIA* X *VITICELLA*.

29928. *ELSHOLTZIA PATRINII* (Lepech.) Garcke.

Distribution.—Temperate and tropical Himalayas, where it ascends to an elevation of 11,000 feet, Siberia, Manchuria, China, and Japan; also naturalized in Germany and the Scandinavian Peninsula.

29929. *PERDICIUM ANANDRIA* (L.) R. Br.

Distribution.—Eastern Siberia, China, Manchuria, Chosen (Korea), and Japan.

29930. *PERDICIUM NIVEUM* (DC.) Skeels.

(*Oreoseris nivea* DC. Prodrumus, vol. 7, p. 18, 1838.)

(*Gerbera nivea* Sch.-Bip. Flora, vol. 27, p. 780, 1844.)

The genus *Perdicium* was established by Linnæus in 1760 (*Plantae Africanæ Rariores* 22, reprinted in *Amoenitates Academicæ*, vol. 6, p. 103, 1764), with a single species, *P. semiflosculare*. The genus *Gerberia*, usually spelled *Gerbera*, to which the species given above is referred by most authors, was first published by Linnæus (*Corollarium Generum*, p. 16) in 1737 and credited to Gronovius. In the *Species Plantarum* of 1753, however, it was united with *Arnica* and does not appear to have been again recognized until 1817, when Cassini (*Bulletin Société Philomatique*, p. 34) reestablished the genus and included in it four of the Linnæan species of *Arnica*, namely, *A. gerbera*, *A. piloselloides*, *A. coronopifolia*, and *A. crocea*, referring to it also the genus *Aphyllocaulon* of Lagasca, 1811, which, he says, can not be distinguished. Since the three species, *Perdicium semiflosculare* L., *Arnica gerbera* L., and *Oreoseris nivea* DC., are considered to be congeneric, and since the genus *Oreoseris*, which is not now considered distinct from the genus under consideration, was not published by De Candolle until 1838, these plants must be known as species of *Perdicium*, that being the earliest name after the publication of the *Species Plantarum* in 1753 that has been applied to the group.

Perdicium niveum was apparently first collected by Wallich on the mountains near Gossain-Than, in the province of Nepal, India, and is known to occur on the Himalayas at an altitude of 7,000 to 12,000 feet between Bhutan and Kashmir. This is an ornamental, herbaceous perennial belonging to the sunflower family.

29931. *HERNIARIA HIRSUTA* L.

Distribution.—From Spain and Italy eastward through southern Europe to the Caucasus region and to Syria.

29932. *LALLEMANTIA IBERICA* (Bieb.) Fisch. and Meyer.

"This plant, which is now being cultivated in southern Russia for its oil-producing seed, is introduced in order to test its value as an oil crop, the oil being considered one of the highest grade drying oils. As it occurs native in the drier parts of Palestine, it may be of great importance in the semiarid portions of the Southwest." (*S. C. Stuntz*.)

See No. 2826 for previous introduction.

Distribution.—Rugged and rocky localities on the lower and subalpine slopes of the mountains in Asia Minor, Armenia, Persia, and Syria.

29923 to 29979—Continued.

29933. LATHYRUS ANGULATUS L.

Distribution.—Southern Europe, extending from Spain and Portugal through southern France, Italy, and Dalmatia, and in northern Africa; naturalized in Greece and Armenia.

29934. LATHYRUS APHACA L.

Distribution.—Extending from England through western, central, and southern Europe to Persia and Afghanistan, and in northern Africa.

29935. LATHYRUS ARTICULATUS L.

See No. 18149 for previous introduction.

Distribution.—Spain, Portugal, and also reported from Greece.

29936. LATHYRUS CLYMENU M L.

See Nos. 4160, 6974, and 18146 for previous introductions.

Distribution.—The countries of southern Europe, northern Africa, and western Asia bordering on the Mediterranean.

29937. LATHYRUS GMELINI (Fisch.) Fritsch.

Distribution.—Central Europe and Asia, extending from the German Empire eastward through southern Russia and Siberia to northern India.

29938. LATHYRUS MARITIMUS (L.) Bigel. Beach pea.

See Nos. 20383 and 22034 for previous introductions.

Distribution.—Seashores of Europe and Asia, and in America from New Jersey and Oregon northward to the Arctic Sea, and along the Great Lakes.

29939. LATHYRUS MONTANUS Bernh.

See Nos. 20641 and 22553 for previous introductions.

Distribution.—Dry woods and open stretches of the lower mountain slopes of Germany and Switzerland.

29940. LATHYRUS NISSOLIA L.

See No. 17773 for previous introduction.

Distribution.—Europe, extending from England southward and eastward to the Caucasus region, and in northern Africa.

29941. LATHYRUS OCHRUS (L.) DC.

See Nos. 6436 and 18148 for previous introductions.

Distribution.—The countries bordering on the Mediterranean from Spain to Syria, and in northern Africa.

29942. LATHYRUS sp.

Distribution.—Central Europe and Asia, extending from Prussia eastward through the Caucasus region and throughout Siberia.

29943. LATHYRUS POLYANTHUS Boiss. and Blanche.

Distribution.—Slopes of the mountains in the vicinity of Beirut, Syria, and in Mesopotamia.

29944. LATHYRUS SETIFOLIUS L.

Distribution.—Southern Europe, extending from southern France through Hungary and Dalmatia to Greece.

29945. LATHYRUS UNDULATUS Boiss.

Distribution.—The vicinity of Constantinople and in the northwestern part of Asia Minor.

29923 to 29979—Continued.

29946. *ONONIS ALOPECUROIDES* L.

See No. 6977 for previous introduction.

Distribution.—The countries of southern Europe and northern Africa bordering on the Mediterranean, and in Syria and Palestine.29947. *OURISIA MACROPHYLLA* Hook.*Distribution.*—Common in damp mountainous localities on the northern and middle islands of New Zealand.29948. *PHYTOLACCA ACINOSA* Roxb.

See No. 29133 for previous introduction.

29949. *PODOPHYLLUM EMODI* Wall.

See No. 29328 for previous introduction.

29950. *TRIFOLIUM ALPESTRE* L.**Clover.**

See No. 20762 for previous introduction.

Distribution.—Europe and western Asia, extending from Sweden, Denmark, and Spain eastward to the region of the Ural Mountains.29951. *TRIFOLIUM BADIUM* Schreb.**Clover.**

See No. 14858 for previous introduction.

Distribution.—Slopes of the mountains of southern Europe, rising to an elevation of 5,500 feet, extending from Spain and southern France eastward to Dalmatia.29952. *TRIFOLIUM LEUCANTHUM* Bieb.**Clover.***Distribution.*—The countries along the northern shore of the Mediterranean from Spain through Italy, Dalmatia, and the Balkan Peninsula to Asia Minor.29953. *TRIFOLIUM LUPINASTER* L.**Clover.**

See No. 24458 for previous introduction.

29954. *TRIFOLIUM OCHROLEUCON* Huds.**Clover.**

See No. 25387 for previous introduction.

29955. *TRIFOLIUM PANNONICUM* Jacq.**Clover.**

See No. 28312 for previous introduction.

29956. *TRIFOLIUM SCABRUM* L.**Clover.**

See No. 27144 for previous introduction.

29957 to 29979. Seeds of trees and shrubs:

29957. *BERBERIS ACUMINATA* Franch.**Barberry.**

See No. 22545 for previous introduction.

Distribution.—In woods in the vicinity of Tchen-fong-chan in the province of Yunnan, China.29958. *BERBERIS PARVIFOLIA* Sprague.**Barberry.**29959. *BERBERIS WILSONAE* Hemsl.**Barberry.**

See No. 25569 for previous introduction.

Distribution.—Scrub-clad mountain sides to an elevation of 6,000 feet, in the western part of Szechwan and in the vicinity of Patung, Province of Hupeh, China.

29923 to 29979—Continued.

29960. *CARAGANA ARBORESCENS* Lam.

See No. 1344 for previous introduction.

Distribution.—Northeastern Asia; cultivated in the United States as an ornamental shrub.

29961. *CARAGANA ARBORESCENS* Lam.

Redowskii variety.

29962. *CARAGANA AURANTIACA* Koehne.

Distribution.—Along banks of streams in the mountains of the north-eastern part of Turkestan.

29963 to 29971. Cotoneasters are especially beautiful for covering walls and for training against the house.

29963. *COTONEASTER APPLANATA* Hort.

29964. *COTONEASTER BULLATA* Bois.

Distribution.—The Province of Tibet in the Chinese Empire.

29965. *COTONEASTER HUMIFUSA* Hesse.

29966. *COTONEASTER INTEGERRIMA* Medic.

See No. 22695 for previous introduction.

Distribution.—Northern and middle Europe, on the mountains in southern Europe, and eastward through northern Asia to the Altai Mountains.

29967. *COTONEASTER LUCIDA* Schlecht.

Distribution.—The region of the Altai Mountains and Lake Baikal in Siberia.

29968. *COTONEASTER MICROPHYLLA GLACIALIS* Hook.

Distribution.—Temperate slopes of the Himalayas from Kashmir to Bhutan at an elevation of 9,000 to 14,000 feet.

29969. *COTONEASTER MULTIFLORA GRANATENSIS* (Boiss.) Wenz.

Distribution.—Slopes of the valleys in the Sierra Nevada Mountains in southern Spain, at an elevation of 5,000 to 6,000 feet.

29970. *COTONEASTER RACEMIFLORA* (Desf.) Koch.

See No. 28210 for previous introduction.

29971. *COTONEASTER SIMONSII* Baker.

See No. 28212 for previous introduction.

29972. *PYRUS BALANSAE* Decaisne.

See No. 27129 for previous introduction.

29973. *PYRUS CANESCENS* Spach.

Distribution.—Apparently originating under cultivation in France.

29974. *PYRUS LONGIPES* Coss. and Dur.

See No. 27131 for previous introduction.

29975. *RUBUS ADENOPHORUS* Rolfe.

29976. *RUBUS FLOSCULOSUS* Focke.

Distribution.—The province of Hupeh in the Chinese Empire.

29977. *RUBUS LASIOSTYLUS* Focke.

See No. 21744 for previous introduction.

29923 to 29979—Continued.**29978. RUBUS PARVIFOLIUS L.**

Distribution.—The provinces of Chihli, Shengking, and Szechwan in China, and in Chosen (Korea) and Japan.

29979. × SORBUS HOSTII (Jacq.) Heynh.

Considered to be a hybrid between *Sorbus aria* and *S. chamaemespilus*, grown in the Austrian Alps.

29980. PANICUM MUTICUM Forsk.**Para grass.**

From Peradeniya, Ceylon. Procured by Mr. William C. Magelssen, American consul, Colombo, Ceylon, from the Royal Botanic Gardens at Peradeniya. Received March 1, 1911.

See Nos. 24402, 24434, 24646 for previous introductions.

29981 to 29983. ASPARAGUS spp.**Asparagus.**

From Erfurt, Germany. Purchased from Haage & Schmidt. Received March 1, 1911.

Seeds of the following:

29981. ASPARAGUS COMORENSIS Baker.**29982. ASPARAGUS PLUMOSUS Baker.**

Variety *blampiedii*.

29983. ASPARAGUS PLUMOSUS Baker.

Variety *robustus*.

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus, and also various forms for florists' use.

29984. HELIANTHUS ANNUUS L.**Sunflower.**

From Mexico. Presented by Dr. Edward Palmer, Durango, Mexico, through Dr. R. H. True. Numbered March 2, 1911.

"Doctor Palmer in 1896 found a rather good-looking sunflower seed in Mexico which has interested me considerably. It is not a large seed, but has a good, plump kernel, and I think will give a fairly good oil yield. The shuck is much thinner than that of the Russian sort, and if it will yield well in this country it might prove valuable. Doctor Palmer tells me that in Mexico where this sort is grown the black shells yield a purplish dye which is esteemed by some." (*True.*)

29985. NICOTIANA SILVESTRIS Speg. and Comes. Wild tobacco.

From Tegucigalpa, Honduras. Presented by Dr. R. Fritzgartner. Received January 25, 1911.

See No. 29091 for purpose for which introduced.

29990. (Undetermined.) (Zinziberaceæ.)**Ginger.**

From Tsinan, Shantung, China. Presented by Dr. J. B. Neal. Received March 4, 1911.

"This ginger comes from a region some 50 or 60 miles south of here, and is planted in soil which my cook describes as being half sand and half ordinary earth. It is planted in April and after the rainy season, which comes in July and August, is ready for harvesting, say in September." (*Neal.*)

29991. AMYGDALUS sp.**Chinese flat peach.**

From Tsinan, Shantung, China. Presented by Dr. J. B. Neal. Received March 6, 1911.

Feicheng. "This peach is grown not far from here. It is a cling and, though rather inconvenient for eating, is very large and luscious, coming into market about the middle of September and lasting for a month or more. It is the last peach we get during the season, the peach supply beginning the middle or last of June and continuing through the summer and early autumn, about four months in all." (*Neal.*)

See No. 21989 for previous introduction.

29992 and 29993.

From Jerusalem, Palestine. Presented by Mr. E. F. Beaumont, American Colony. Received February 28, 1911.

Seeds of the following:

29992. ASPARAGUS ACUTIFOLIUS L.**Wild asparagus.**

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus, and also various forms for florists' use.

29993. MEDICAGO SATIVA L.**Alfalfa.**

Damascus.

29994 to 29998.

From Haifa, Palestine. Presented by Mr. A. Aaronsohn, director, Jewish Agricultural Experimental Station. Received March 6, 1911.

29994. PYRUS SYRIACA Boiss.**Wild pear.**

Cuttings.

"Recommended as a stock for pears in arid soils. These cuttings came directly from the forest and grew spontaneously." (*Aaronsohn.*)

Distribution.—The island of Cyprus, Syria, southern Kurdistan, and western Persia.

29995. PYRUS sp.

Cuttings.

29996. PROSOPIS STEPHANIANA (Bieb.) Kunth.

"A low and very deep-rooting shrub. Pods readily eaten by sheep and goats. Crossing with *Prosopis juliflora* might give very interesting results." (*Aaronsohn.*)

Seeds.

Distribution.—The countries at the eastern end of the Mediterranean, extending from the Caucasus region through Asia Minor, Syria, western Persia, and Assyria to Egypt.

29997. NICOTIANA TABACUM L.**Tobacco.**

"A stout variety, broad leaves, and white, or pink flowers. Cultivated especially in central and northern Palestine. The leaves are rather coarse and of poor quality, but the culture of this variety may be of interest for hybridization or systematic purposes." (*Aaronsohn.*)

Seeds.

29998. CITRULLUS VULGARIS Schrad.**Watermelon.**

"*Bizr mactooob.* In Arabic this means 'written seeds.' The illiterate Arabs believe that sentences of the holy Koran are inscribed on the parenchyma of the seeds. This is a variety of curious rather than economic value." (*Aaronsohn.*)

Seeds.

29999. BERBERIS STENOPHYLLA CORALLINA Hort. Barberry.

From Ussy, France. Purchased from Pierre Sebire. Received March 6, 1911.
See No. 25574 for previous introduction.

30001 to 30004. CITRUS DECUMANA (L.) Murr. Pomelo.

From Bangkok, Siam. Presented by Mr. G. Cornell Tarler, American consul general. Received March 7, 1911.

Cuttings of the following; quoted notes by Mr. Tarler:

30001. "Fruit is white in color and sweet in taste."

30002. "Fruit is white and a little sour."

30003. "Fruit is white and sweet."

30004. "Fruit is red (like our blood orange) and sweet."

"There are three kinds of seedless pomelos in Siam, all presenting the same outward appearance but differing in flavor and inside appearance. Two of the varieties have a sweet taste, one having a white meat and the other red; the third variety has a white meat, but a slightly sour taste. All varieties are more or less round in shape (bell-shaped), having diameters of 4 to 6 inches. The white pomelo is more prolific than the red.

"The trees grow 10 to 15 feet high and begin bearing fruit at the age of four years; they continue bearing for more than a quarter of a century. One tree ordinarily produces about a hundred pomelos a year.

"During the dry season the pomelos yield no seed, but during the rainy season they sometimes contain many seeds.

"Another thing of importance to be remembered in connection with pomelo culture is the fact that the trees like salt water. In case the orchards are not flooded with sea water, it is customary to apply about 2 pounds of salt to each tree." (*Tarler.*)

30005 to 30007.

From Mount Coffee, Liberia. Presented by Mr. Henry O. Stewart, through Mr. G. N. Collins, Bureau of Plant Industry. Received March 7, 1911.

Seeds of the following; quoted notes by Mr. Stewart:

30005. (Undetermined.)

"Gallah name *Zoe*. A large tree growing to a height of 40 feet. Deer eat the seed, and when it is roasted people also eat it."

30006. (Undetermined.)

"Gallah name *Dea*. This tree is used in the making of canoes and planks. The seed is used as food by the people; it is very hard and has to be cooked all day until it begins to break into pieces; then it is taken off and put into plenty of cold water; it is then ready to eat."

30007. (Undetermined.)

"Gallah name *Kory*. This tree is large, growing to a height of 49 feet. It is very hard, but is never used for anything, because it does not grow straight. The seed is good to eat and is also used for making oil."

30009. MEDICAGO FALCATA L. Siberian alfalfa.

From Quetta, British India. Purchased through Mr. F. Booth Tucker, Salvation Army, Simla, India. Received March 7, 1911.

30010 and 30011. ASPARAGUS spp. Asparagus.

From Naples, Italy. Purchased from Dammann & Co. Received March 6, 1911.

Seeds of the following:

30010. *ASPARAGUS PLUMOSUS* Baker.

Variety *superbus*.

30010 and 30011—Continued.**30011. ASPARAGUS SPRENGERI** Regel.

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus, and also various forms for florists' use.

30012 to 30024.

From Edinburgh, Scotland. Presented by Dr. Isaac Bailey Balfour, Royal Botanic Garden. Received March 6, 1911.

Seeds of the following; procured for experimental tests and special breeding work:

30012 to 30015. ASPARAGUS spp. Asparagus.**30012. ASPARAGUS COMORENSIS** Baker.**30013. ASPARAGUS MADAGASCARIENSIS** Baker.

Distribution.—Known only on the island of Madagascar.

30014. ASPARAGUS ASPARAGOIDES (L.) W. F. Wight.

This South African liliaceous plant, commonly grown in our green-houses as "smilax," was first given a binomial name by Linnæus in 1753, *Medeola asparagoides*. It was again described by Linnæus's son (Supplementum Plantarum, p. 203, 1781) as *Dracaena medeoloides*, the material coming from Thunberg. In 1794 (Prodromus Plantarum Capensium, p. 66) Thunberg transferred the species to the genus *Asparagus*, using the name *Asparagus medeoloides*. The correction to *Asparagus asparagoides* was made by Mr. W. F. Wight in the Century Dictionary and Cyclopedia (vol. 12, p. 339, 1909) under the heading "Myrsiphyllum."

Asparagus asparagoides was reported by Thunberg from South Africa without definite locality, and is now known to occur from Namaqualand, the Kalahari region, and Natal, southward to the Cape.

30015. ASPARAGUS SPRENGERI Regel.**30016. AGROPYRON INTERMEDIUM (Host) Beauv.**

Distribution.—Southern Europe and western Asia, extending from Spain and southwestern France eastward through Italy and the Balkan Peninsula to the Caucasus region.

30017. GOODIA LOTIFOLIA Salisb.

Distribution.—A tall shrub growing in the states of New South Wales, Victoria, South and West Australia, and in Tasmania.

30018. GOODIA PUBESCENS Sims.

Distribution.—On the mountains in the vicinity of Dandenong, in the State of Victoria, Australia, and throughout the island of Tasmania.

30019. DACTYLIS GLOMERATA L.

Orchard grass.

Variety *variegata*.

30020. INDIGOFERA ATROPURPUREA Hamilton.

Distribution.—A tall shrub found in the tropical and temperate slopes of the Himalayas to an altitude of 9,000 feet, from Hazara and the Punjab region to Khasi in northern India.

30021. INDIGOFERA AUSTRALIS Willd.

Wild indigo.

Distribution.—In grassy places and along rivers throughout Australia and in Tasmania.

30022. KENNEDYA BAUMANNI Meissner (?).**30023. MEDICAGO CARSTIENSIS** Wulfen.**30024. FESTUCA RUBRA** L.

Red fescue.

30025 and 30026. STRYCHNOS spp.

From Amani, German East Africa. Presented by the director, Biologisch-Landw. Institut. Received March 9, 1911.

Seeds of the following:

30025. STRYCHNOS sp.

30026. STRYCHNOS QUAQUA Gilg.

Distribution.—The vicinity of Quilimane, in the Mozambique district of East Africa.

“Introduced for the work of this office in bringing together all the members of this genus with edible fruits, in the hope of finding some worthy additions to the list of semitropical fruits standing shipment well. One edible species, *Strychnos spinosa*, has fruits as large as a small pomelo, with a shell that requires a hammer to crack it.” (Fairchild.)

30027. MEDICAGO FALCATA L.

Siberian alfalfa.

From Svalöf, Sweden. Presented by Dr. N. H. Nilsson, director, Swedish Seed-Breeding Association. Received March 8, 1911.

“This is seed from our real *Medicago falcata*, which grows wild in most parts of our country and is a very good species. Its harvest value is not very great, as it is frequently lying down, but as a pasture plant it is more valuable. It turns vast dry stretches of sandy (but calcareous) ground into excellent pasture fields, where an astonishingly great number of cattle can feed the whole summer. The seed should be prepared in order to make it germinate.” (Nilsson.)

30030 to 30032. PYRUS spp.

Wild pears.

From Algeria. Presented by Dr. L. Trabut, Algiers. Received March 3, 1911.

Cuttings of the following; quoted notes by Dr. Trabut:

30030. PYRUS LONGIPES Coss. and Dur.

“A large fruit.”

30031. PYRUS GHARBENSIS Trabut.

“This is near to *Pyrus longipes*, but is sufficiently characterized by the form of the leaves and the fruit. This pear grows on the tufas in the region of Lamoriciere, Daya. I called it *gharbensis* from the name of the region which formed part of the ancient kingdom of Gharb (of the west), at the time of Arab domination.”

30032. PYRUS sp.

“A *Pyrus* which I have not yet distinguished, and which occurs in the basins of the high plateaus on the edge of the Great Shott, a location more calcareous and even alkaline. (This *Pyrus* has been provisionally assigned to *P. gharbensis*, but it is not identical.)”

30033. PYRUS sp.

Wild pear.

From Algiers, Algeria. Presented by Dr. L. Trabut, Botanic Gardens. Received March 6, 1911.

“Seeds of a pear occurring on the calcareous tuffs in the dry region south of Oran. Stock good for very calcareous soils.” (Trabut.)

NOTE.—This seed was received under the name *Pyrus gharbensis*.

30034. COFFEA MAURITIANA Lam.

From Reunion Island. Presented by Mr. G. Regnard, Port Louis, Mauritius.
Received March 7, 1911.

Distribution.—In the woods on the slopes of the mountains in the islands of Mauritius and Reunion.

30035 to 30039.

From Yachow, China. Presented by Mr. E. T. Shields. Received March 9, 1911.

Seeds of the following:

30035 to 30038. ZEA MAYS L.

Corn.

30035. White.

30036. Yellow.

30037. Smooth surface pop corn.

30038. Rough surface pop corn.

30039. MACHILUS NANMU (Oliv.) Hemsl.

Nanmu.

See Nos. 28128 and 29485 for previous introductions.

30040. EUGENIA DOMBEYI (Sprengel) Skeels.

(*Eugenia brasiliensis* Lamarck, Encyclopédie Méthodique Botanique, vol. 3, p. 203, 1789.)

(*Myrtus dombeyi* Sprengel, Systema Vegetabilium, vol. 2, p. 485, 1825.)

The seeds of this Brazilian tree were received under the name *Eugenia brasiliensis* Lamarck, but Aublet (*Histoire des Plantes de la Guiane Française*, vol. 1, p. 511), in 1775 had used for another species the name *Eugenia brasiliana*, based on *Myrtus brasiliana* L. (*Species Plantarum*, vol. 1, p. 471, 1753.) As it is not allowable to apply the same name to two species in the same genus, the later species must be given another name. This principle was recognized by Sprengel, who, writing of these plants as species of *Myrtus*, changed the name of Lamarck's *brasiliensis* to *dombeyi*, evidently because Lamarck secured his information on the plant from the observations and specimens of M. Dombey. It now becomes necessary to use this specific name in the genus *Eugenia* to which the species is generally admitted to belong. *Eugenia dombeyi* grows in the province of Pernambuco, and is cultivated in the vicinity of Rio de Janeiro, Brazil.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received March 10, 1911.

"A very fine shrub, 10 to 15 feet high, with large glazed leaves and white blossoms. Fruit same as the cherry, red, becoming black when full ripe; sweet and soft flesh." (Regnard.)

Seeds.

30041. MESEMBRYANTHEMUM FORSKAHLI Hochst.

Samh.

From Jerusalem, Palestine. Presented by Mr. John D. Whiting, deputy consul.
Received March 9, 1911.

"A bread more nourishing than wheat is prepared from the samh. The seed pods they throw into water and afterwards dry the seeds in the sun, which when ground in a mill they make into a thin bread and cook it in an iron called saj." (*Forskål's Flora Aegyptiaco-Arabica*, 1775.)

"The samh is a small plant which grows wild, the Bedouins say, all over the desert plateau east of Maan, where nothing is cultivated, there being insufficient rain for any grain to grow.

30041—Continued.

"The natives state that in some years the samh is more plentiful than in others, especially when a generous amount of rain falls in the mountain districts in the west, in which case it is likely that the samh districts receive a small share thereof.

"The plants grow close together, with short stems like lentils. The Bedouins pull them up by hand and flail with a stick, which removes the small seed pods. These are then taken to the wells, and holes from the size of a bathtub up are made in the sandy clay soil and filled with water. The seed pods are thrown into these holes in small quantities and stirred by the women with sticks and their bare feet. The action of the water opens the pods; the seeds fall to the bottom while the hulls float. The seeds are then sifted through fine sieves, to take out as much of the grit as possible, and ground into flour. The bread made from this is very black and gritty, the latter being accounted for by the way the seeds are hulled in sandy holes. To improve the bread the natives add a little sugar to the flour or a kind of molasses made from the seeds of the juniper tree (*Juniperus phoenicea*) by boiling and then straining them.

"The plant, as near as I can learn, grows in a clayey, sandy, saline soil, and where very little rain falls; it ripens about the same time as barley, but, contrary to most other plants, the seed pods do not open when ripe. They are affected by dampness but not by heat, which enables the Bedouin to collect them all summer.

"Possibly this plant might thrive in some arid region in the United States, and while it might never be used for human food, examination might show it to have an economic value." (*Extract from the Daily Consular and Trade Reports, Feb. 16, 1911.*)

Distribution.—Sandy shores and desert places in southern Syria and along the Red Sea.

30042 to 30060.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, March 9, 1911.

Cuttings of the following:

30042. *VITIS VINIFERA* L.

Grape.

From Khotan, Chinese Turkestan. "(No. 801, November 25, 1910.) A table variety called *Monake*. Bunches large to very large; berries also large, of greenish-yellow color, often with reddish cheek on the sun-exposed side; they are of a pleasant, fresh-sweet taste, and possess good keeping and shipping qualities, although the berries easily break off their peduncles when becoming dry. They can also be dried and then furnish a large, meaty raisin, but the seeds in these are somewhat too large. To obtain the greatest productivity the vines should be pruned with long wood.

"Grapes in Chinese Turkestan are nearly always grown on arbors and with long wood. The vines are taken down in late autumn after the first frost has occurred, tied loosely together, laid on the earth or in a shallow ditch, and covered with dry soil from 1 to 3 feet thick. In spring they are uncovered, pruned, and tied to the trellises. As temperatures rarely fall below zero, Fahrenheit, in the grape-growing regions, this burying of the vines seems to be done mainly to prevent them from being ruined through the great fluctuations of temperatures that are experienced in central Asia, the direct hot rays of the midday sun often being followed by very cold nights. Grapes are always grown under irrigation in Chinese Turkestan, but the quantity of water given varies considerably with the nature of the soil and with the locality." (*Meyer.*)

30042 to 30060—Continued.

30043. *VITIS VINIFERA* L.

Grape.

From Khotan, Chinese Turkestan. "(No. 803, November 25, 1910.) A table grape called *Kishmis*. Bunches small, very compact; berries small, of greenish-white color; stands some alkali in the soil; bears best when pruned with short wood." (Meyer.)

30044. *VITIS VINIFERA* L.

Grape.

From Khotan, Chinese Turkestan. "(No. 832, November 26, 1910.) A table grape called *Saïbe* or *Ghusaine*. Bunches large, very elongated, with side bunches; berries large, of long shape, often pointed; color, light amber; taste very sweet and aromatic; has good keeping and shipping qualities, but disappears rather quickly from the markets on account of being so much in demand. See note under No. 30042." (Meyer.)

30045. *VITIS VINIFERA* L.

Grape.

From Karawag, Chinese Turkestan. "(No. 865, December 10, 1910.) A table grape called *At-Barre*. Bunches long; berries of elongated shape, blue-black in color; ripens late in summer; not a keeper; to be pruned with long wood to obtain best results. See remarks under No. 30042." (Meyer.)

30046. *VITIS VINIFERA* L.

Grape.

From Karawag, Chinese Turkestan. "(No. 866, December 10, 1910.) A table grape called *Ak-uzum*. Bunches medium large, of round form; berries round, greenish white in color; taste fresh, sweet; to be pruned with long wood. See remarks under No. 30042." (Meyer.)

30047. *VITIS VINIFERA* L.

Grape.

From Shagra-Bazar, Chinese Turkestan. "(No. 867, December 24, 1910.) A table grape called *Kara-uzum*. Bunches medium large, round in shape, berries round, black in color; taste quite sweet; not a keeper; stands a fair amount of alkali in the soil; to be pruned like preceding number." (Meyer.)

30048. *VITIS VINIFERA* L.

Grape.

From Karawag, Chinese Turkestan. "(No. 868, December 10, 1910.) A table grape called *Ak-saïbe* (in Russian Turkestan called *Akghusaine*). Bunches very long, with side bunches; berries very long and slightly pointed; color, waxy white; taste very sweet and aromatic. A good keeper when hung in a cool, dry place; to be pruned like preceding numbers." (Meyer.)

30049. *TAMARIX* sp.

Tamarisk.

From Sullras, Chinese Turkestan. "(No. 869, December 6, 1910.) Found on dry saline places; the shoots when young are covered with spiny bracts which drop off afterwards. This plant seems to thrive in regions where there is moving sand and grows vigorously through a forming sand hill. Some of these tamarisk mounds are 20 or more meters high and consist of a mass of sand in which the tamarisk roots and branches are the framework that holds the whole together; recommended as an ornamental bush and fuel supplier in desert regions." (Meyer.)

30050. *TAMARIX* sp.

Tamarisk.

From near Karghalik, Chinese Turkestan. "(No. 870, December 13, 1910.) Found in moist, saline places. Produces masses of rosy flowers all through the summer. The amount of alkali these plants are able to withstand is truly remarkable. Often the surface of the soil is coated with a white cake, and yet they thrive. Recommended as an ornamental shrub and a fuel supply in strongly alkaline regions." (Meyer.)

30042 to 30060—Continued.

30051. *SALIX* sp.

Willow.

From Pustan Terek, Chinese Turkestan, 7,000 feet elevation above sea level. "(No. 873, December 29, 1910.) A tall-growing willow with rather slender branches, called *Kok suchet*. The bark on young twigs is of a vivid green, making the tree look in winter as if it still had leaves. The locality where these trees grow is over 6,000 feet in altitude and the soil alkaline; they are therefore recommended for the northwestern regions of the United States to serve as ornamental park and garden trees." (Meyer.)

30052. *SALIX* sp.

Willow.

From Khanaka, Oasis of Sandju, Chinese Turkestan, elevation 6,000 feet above sea level. "(No. 874, December 5, 1910.) A willow which grows to be very old and large when not continually pollarded. Bark of young branches of a mahogany-brown color. Old trees twist curiously and become highly picturesque objects in the landscape. Resistant to alkali, great heat, and drought. Recommended as an ornamental tree in those regions of the United States where the rainfall is light and the summer temperatures high." (Meyer.)

30053. *SALIX* sp.

Willow.

From Yarkand, Chinese Turkestan. "(No. 875, December 18, 1910.) A willow called *Tagh suchet*. A medium-sized tree with long, somewhat drooping branches whose bark is of a beautiful yellowish-green color. Cultivated in gardens as an ornamental tree. Able to stand considerable drought and alkali. Recommended as an ornamental garden tree in desert regions under irrigation." (Meyer.)

30054. *POPULUS EUPHRATICA* Oliver.

Desert poplar.

From Toplich, Chinese Turkestan. "(No. 879, December 21, 1910.) The desert poplar called *Kabak Tograk*. A remarkable poplar, very frequent on dry, sandy, and alkaline wastes; sometimes found as a solitary specimen, then again in big groves. Leaves are curiously variable, occurring in all sorts of shapes often on one branch. The wood is heavy and saturated with alkali. It is used mainly as a fuel, although buckets, dippers, and troughs are made from it. The tree is sand binding and is recommended for this purpose; also as an ornamental garden and park tree and as a fuel supplier in desert regions." (Meyer.)

30055. *POPULUS NIGRA* L.

Black poplar.

From Khanaka, Oasis of Sandju, Chinese Turkestan. "(No. 881, December 4, 1910.) The black poplar called *Sa-yu terek*; found here and there in tremendous specimens, especially in old burial grounds; not a common tree, however. It is from this species that the so-called Lombardy poplar has originated. It grows to a great age and becomes very spreading; recommended as a stately park tree in the drier regions of the United States." (Meyer.)

30056. *POPULUS ALBA* L.

White poplar.

From Upal, Chinese Turkestan. "(No. 885, December 31, 1910.) The white poplar called *Ak terek*; grown all through Chinese Turkestan as a lumber and fuel supplier; stands considerable drought and alkali. In some burial grounds one finds gigantic specimens, with a circumference of 25 to 30 feet, 5 feet above the ground. This poplar is recommended as a quick-growing shade tree in desert regions under irrigation. The trees can be pollarded and then furnish a number of even-sized poles, which come in very handy for rough building purposes." (Meyer.)

30042 to 30060—Continued.

30057. *POPULUS ALBA BOLLEANA* Lauche.

White poplar.

From Upal, Chinese Turkestan. "(No. 886, December 31, 1910.) The pyramidal white poplar called *Suda terek*. Although this poplar is a variety of the ordinary white one, its wood is very much better in quality and is especially in demand for rafters and for board making, as it does not split to any extent. For this reason it is highly appreciated and is the lumber tree par excellence in Chinese Turkestan. One finds it planted everywhere—around gardens, along the roads, along irrigation canals, and often even in big patches, the trees standing only 5 feet or so apart. The trees are singularly free from disease and grow remarkably fast, even on rather alkaline soils. Old trees can be pollarded when a number of straight, even-sized poles are desired. This poplar has in all probability originated in Chinese Turkestan and is thoroughly accustomed to a desert climate. It therefore deserves the greatest consideration as a lumber and ornamental tree, also as a windbreak, in those regions of the United States where the summers are hot, the winters fairly cold, and where everything has to be raised by irrigation." (*Meyer*.)

30058. *SALIX* sp.

Willow.

From near Langru, Chinese Turkestan. "(No. 889, November 28, 1910.) A golden willow, called *Li-la-machon*, cultivated in gardens as an ornamental tree. Bark of the young branches golden yellow, turning into a yellowish green as they get older. It is a medium-sized, low-headed tree of somewhat flat, globular shape; likes slightly moist places, but stands a fair amount of alkali. Recommended as an ornamental park and garden tree in the desert regions of the United States." (*Meyer*.)

30059. *CYDONIA OBLONGA* Miller.

Quince.

From Kashgar, Chinese Turkestan. "(No. 899, Jan. 11, 1911.) This quince is called in Turkestan *Beehà*. A large variety with ribbed fruits, covered with heavy down; a prolific bearer. The fruits stewed with sugar and made into a compote or cooked with rice are favorite foods in both Russian and Chinese Turkestan. The plants stand considerable alkali and drought and are recommended as a fruit tree for the home garden in desert regions." (*Meyer*.)

30060. *ULMUS* sp.

Karagatch elm.

From Khanaka, Oasis of Sandju, Chinese Turkestan. "(No. 902, Dec. 5, 1910.) A variety of elm called *Kara-yagatch* found in an old graveyard. It has graceful, slightly drooping branches. Recommended as an ornamental garden and park tree in semiarid regions and with slight irrigation in desert places." (*Meyer*.)

30061. *MEDICAGO CANCELLATA* Bieb.

Collected near Sarepta on top of the Jergeni hills, on white, stony, sandy soil effervescing with acid, by Mr. W. Grekow, Tsaritsyn, Saratov, Russia. Presented by Mr. W. von Arapow, Samara, Russia, at the request of Mr. C. S. Scofield. Received February 28, 1911.

Distribution.—Dry sandy slopes of the Caucasus Mountains near the Caspian Sea and on the plains along the Volga River in the vicinity of Sarepta in southeastern Russia.

30062. *CRATAEGUS AZAROLUS* L.

From Haifa, Palestine. Presented by Mr. Aaron Aaronsohn, director, Jewish Agricultural Experiment Station. Received March 13, 1911.

"Recommended as a stock for pears on dry land." (*Aaronsohn*.)

See No. 26116 for further description.

30063. ELAEAGNUS ANGUSTIFOLIA L.**Oleaster.**

From Fallon, Nev. Grown by Mr. F. B. Headley, superintendent, Truckee-Carson Experiment Farm. Received March 13, 1911.

"This seed was gathered last year from plants received from the Yankton Nursery of South Dakota in 1907.

"This tree is especially well adapted to the conditions of this section. It grows rapidly, makes a dense hedge, and will stand considerable alkali in the soil." (*Headley*.)

30064. VACCINIUM VITIS-IDAEA L.**Cowberry.**

From Bremen, Germany. Presented by Dr. G. Bitter, Botanical Garden. Received March 13, 1911.

Procured for the breeding experiments of Mr. Frederick V. Coville.

30065 and 30066. DIOSPYROS KAKI L. f.**Persimmon.**

From Okitsu, Japan. Presented by Mr. T. Tanakawa, in charge of Government Horticultural Experiment Station. Received at the Plant Introduction Garden, Chico, Cal., March 8, 1911.

Cuttings of the following:

30065. *Fugi*. Astringent variety.

30066. *Fuyu*. Nonstringent variety.

30067. CARICA PAPAYA L.**Papaya.**

From Tahiti, Society Islands. Presented by Mr. North Winship, American consul. Received March 7, 1911.

30068 to 30079.

From Chile. Received through Mr. José D. Husbands, Limavida, Chile, February 23, 1911.

30068 and 30069. *TIGRIDIA* sp.

"Flowers blue, about 2 inches in diameter, with yellow centers; plant about 4 or 5 inches high; bulbs comestible." (*Husbands*.)

30068. Bulbils.

30069. Seeds.

30070 and 30071. (Undetermined.)

"Extra fragrant flowers in large bunches, white and different shades of lilac and lavender in the same bunch, edge of leaves ruffled and saw-toothed; a delightful flower; name unknown. Lasts long in bloom and when cut stays fresh in water 18 to 22 days. Wild flowers sold in the markets and flower stands." (*Husbands*.)

30070. Bulbils.

30071. Seeds.

30072 and 30073. *AGAVE* sp. (?)

"An extra early bulb. Bears bunches of bright-crimson flowers, also crimson and yellow; these are 2 inches or more long, three to six flowers per stem; plant stem about 10 to 12 inches high; fine." (*Husbands*.)

30072. Bulbils.

30073. Seeds.

30074 and 30075. *CALYDorea SPECIOSA* (Hook.) Herbert.

"A bright navy-blue flower with a golden center, about 2 inches in diameter; plant about 4 inches high when in bloom; extra early; grows in wet or dry

30068 to 30079—Continued.

places in poor soil. It is sparingly found in the highlands but prefers the plains. Bulbs are edible boiled, roasted, or baked." (*Husbands.*)

30074. Bulbils.

30075. Seeds.

30076 and 30077. *TIGRIDIA* sp.

"The same as No. 30068 except in shade of color. These are lavender and generally have two flowers to each stem. Edible." (*Husbands.*)

30076. Bulbils.

30077. Seeds.

30078 and 30079. (Undetermined.)

"*Pique.* There is a large assortment of this charming flower both in form and distinct color; no two are exactly alike. The bulbs are eaten boiled, roasted, or baked." (*Husbands.*)

30078. Bulbils.

30079. Seeds.

30080. PERSEA AMERICANA Miller.

Avocado.

From Santa Barbara, Cal. Presented by Mr. George A. White, at the request of Mr. H. F. Schultz. Received at the Plant Introduction Garden, Chico, Cal., March 8, 1911.

"Buds from a seedling avocado tree growing in Santa Barbara." (*White.*)

30081 and 30082.

From the Philippine Islands. Presented by Mr. C. H. Shamel, Seattle, Wash. Received March 11, 1911.

Seeds of the following:

30081. *CLITORIA TERNATEA* L.

"This is a flowering vine found growing about a yard at Mati, Mindanao. It has the most brilliant blue flower I have ever seen and makes a pretty, ornamental vine." (*Shamel.*)

30082. *CARICA PAPAYA* L.

Papaya.

"From a rather small-sized fruit which is said to mature in eight months and which it occurs to me is worth testing as a greenhouse plant, as it produces heavily in a small space." (*Shamel.*)

30083. NICOTIANA TABACUM L.

Tobacco.

From Sacramento, Coahuila, Mexico. Presented by Mr. Lauro Liadas, Director General of Agriculture, Mexico, Mexico. Received March 14, 1911.

30084. CAPSICUM ANNUUM L.

Red pepper.

From Bilbao, Spain. Procured by Mr. Harry A. McBride, American vice and deputy consul general, Barcelona, Spain. Received March 13, 1911.

"*Pimiento Morron.*"

30085 to 30089. MANGIFERA INDICA L.

Mango.

From Lucknow, United Provinces, India. Presented by Mr. H. J. Davies, superintendent, Government Horticultural Gardens, at the request of Rev. N. L. Rockey, Gonda, United Provinces. Received March 13, 1911.

Cuttings of the following:

30085. *Amin.*

30088. *Langra.*

30086. *Bombay.*

30089. *Safeda.*

30087. *Dilpasand.*

30090. ZEA MAYS L.**Corn.**

From Shanghai, China. Presented by Rev. J. M. W. Farnham. Received March 9, 1911.

"*Limoo*. A white variety." (*Farnham*.)

NOTE.—Some of this corn was contained in the mixture previously received and given No. 22308.

30091. DIOSCOREA sp.**Yampie.**

From Kingston, Jamaica. Presented by Mr. William Harris, superintendent, Public Gardens, Department of Agriculture. Received March 9, 1911.

"Tubers mostly of fair size, but generally rather rough and irregular in form. The flesh is very white and of good flavor when cooked, resembling somewhat the white-fleshed yampie of the Canal Zone (No. 29540)." (*R. A. Young*.)

30092. JUNIPERUS CEDRUS Webb.

From island of Palma. Presented by Dr. George V. Perez, Puerto de Orotava, Teneriffe, through Mr. S. T. Dana, Acting Chief of Silvics, United States Department of Agriculture, Forest Service. Received February 25, 1911.

"Seed of this very rare and nearly extinct tree. It comes from the heights of the neighboring island of Palma, where the few specimens that remain are being destroyed without mercy. I am afraid the seed is very bad, most of it being barren, probably coming from isolated female trees, but I hope that among it there may be some fertile seed. In years to come I hope to have some seed myself from a few young trees in my garden here." (*Perez*.)

30093. INDIGOFERA sp.

From Port Moresby, Papua, British New Guinea. Presented by Mr. J. A. Hamilton, care of the general manager, British New Guinea Development Co. Received March 10, 1911.

"A legume which grows on the edge of swamps and also drier ground. It has well-developed nodules; the only fault seems to be that it is not a fodder plant and could be used only for soiling purposes. Might do for renovating rice land." (*Hamilton*.)

Probably the same as No. 27562.

30094. MEDICAGO SATIVA L.**Alfalfa.**

From Berkeley, Cal. Presented by Prof. E. J. Wickson, director, Agricultural Experiment Station, through Mr. J. M. Westgate. Numbered March 16, 1911.

"This seed was grown from No. 1151, which gave the best results of any of the Turkestan alfalfas included in the original tests. Flowers variegated." (*Westgate*.)

30095 to 30112.

From Palestine. Presented by Mr. Aaron Aaronsohn, director, Jewish Agricultural Experiment Station, Haifa, Palestine. Received February 27, 1911.

Seeds of the following:

30095. HIPPOCREPIS UNISILICUOSA L.

Distribution.—Countries along the Mediterranean from Spain through Italy, Greece, Asia Minor, and Syria, and in northern Africa.

30096. CIRCINNUS CIRCINATUS (L.) Kuntze.

Distribution.—Same as the preceding.

30097. MEDICAGO ROTATA Boiss.

Distribution.—On hillsides and in cultivated places in the vicinity of Gaza and on the plain of Damascus in Palestine, and in Mesopotamia.

30095 to 30112—Continued.

30098. SCORPIURUS SUBVILLOSA L.

Distribution.—The countries bordering on the Mediterranean in southern Europe, western Asia, and northern Africa.

See Nos. 16889 and 17788 for previous introductions.

30099. SCORPIURUS MURICATA L.

Distribution.—Same as the preceding.

See No. 16887 for previous introduction.

30100. TRIFOLIUM PILULARE Boiss.

Clover.

See No. 26574 for previous introduction.

30101. TRIFOLIUM SCABRUM L.

Clover.

See No. 27144 for previous introduction.

30102. TRIFOLIUM SPUMOSUM L.

Clover.

Distribution.—In grassy places in the Mediterranean region of southern Europe, western Asia, and northern Africa.

See No. 7759 for previous introduction.

30103 and 30104. TRITICUM DICOCCUM DICOCCOIDES (Koern.) Asch. and Graebn.

Wild wheat.

30103. Black hulled.

30104. White hulled.

See No. 29026 for previous introduction.

30105. POTERIUM SPINOSUM L.

Distribution.—The islands of Sardinia and Sicily, and from Dalmatia eastward through the Grecian Islands to Syria.

A small spiny undershrub, said to be a very interesting ornamental. (*Extract from Bailey.*)

30106. CORONILLA SCORPIOIDES (L.) Koch.

Distribution.—The countries along the Mediterranean from Spain through Italy, Greece, the Caucasus region, and Asia Minor, to Persia, and in northern Africa.

30107. ASTRAGALUS CALLICHROUS Boiss.

Distribution.—On the plains of Palestine in the vicinity of Gaza.

30108. ASTRAGALUS HAMOSUS L.

Distribution.—Stony locations in the countries bordering on the Mediterranean in southern Europe, western Asia, and northern Africa.

30109. TRIFOLIUM LAPPACEUM L.

Clover.

Distribution.—Throughout the Mediterranean region of southern Europe, western Asia, and northern Africa, and in the Canary, Azores, and Madeira islands.

See No. 7754 for previous introduction.

30110 and 30111. MEDICAGO CILIARIS (L.) All.

Distribution.—The countries along the Mediterranean in southern Europe, western Asia, and northern Africa.

30112. AEGILOPS OVATA L.

Distribution.—The countries of southern Europe and northern Africa bordering on the Mediterranean, and eastward through Syria and Palestine to Persia.

30114 to 30117.

From Canal Zone, Panama. Collected by Mr. William R. Maxon. Received February 28, 1911.

Plants of the following:

30114. (Undetermined.) (Orchidaceæ.) **Orchid.**

Found on trunks of small trees in forests along the Rio Indio de Gatun, Canal Zone; near sea level. (M. No. 4844.)

30115. *VITTARIA* sp. **Fern.**

Found on tree trunks and lianes in the same locality as No. 30114. (M. No. 4850.)

30116. *EPIDENDRUM* sp. (?)

Found on tree trunks and lianes in the same locality as No. 30114. (M. No. 4851.)

30117. (Undetermined) (Orchidaceæ.) **Orchid.**

Found on a tree trunk near Culebra, Canal Zone. (M. No. 4902.)

30118. BICHEA ACUMINATA (Beauv.) W. F. Wight. Kola nut.

The genus *Cola* was published by Schott and Endlicher (*Meletemata Botanica*, p. 33, 1832) with six species, of which the first is *Cola acuminata*, based on *Sterculia acuminata* Beauv. (*Flore d'Oware*, p. 41, pl. 24, 1804). But in 1812 the genus *Bichea* was established by Stokes (*Botanical Materia Medica*, vol. 2, p. 564) with one species, *B. solitaria*, which is considered to be the same as *Sterculia acuminata* of Beauvois. The generic name *Cola* must therefore be replaced by *Bichea*, which has priority by 20 years. The correction of the name of the Kola nut from *Cola acuminata* to *Bichea acuminata* was made by Mr. W. F. Wight in the *Century Dictionary and Cyclopedia* (vol. 11, 1909, p. 271), under the heading "*Cola*."

From Mount Coffee, Liberia. Presented by Mr. Henry O. Stewart, through Mr. G. N. Collins, Bureau of Plant Industry. Received March 17, 1911.

See No. 5217 for description.

Distribution.—This is found in the countries along the west coast of Africa from Sierra Leone and Liberia through Guinea to the valley of the Kongo River.

30119. AVENA ABYSSINICA Hochst.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received February 23, 1911.

30120 to 30132.

From the State of Michoacan, Mexico. Presented by Mr. Lauro Liadas, Director General of Agriculture, Mexico City, who procured them from the governor of the State of Michoacan. Received March 15, 1911.

Seeds of the following:

30120. NICOTIANA TABACUM L. Tobacco.

Cimarron. From Istlan.

30121. ERYNGIUM sp.

Yerba del Sapo. From La Piedad.

30122 to 30132. NICOTIANA TABACUM L. Tobacco.

30122. *Cimarron.* From La Piedad.

30123. *Mije.* From Etucuará, Acuitzio.

30124. *Cimarron.* From Jiquilpan.

30120 to 30132—Continued.

30125. *Tabaquillo*. From Tacambaro.
 30126. *Mije*. From Tacambaro.
 30127. *Monte*. From Tacambaro.
 30128. *Cimarron*. From Taretan, Uruapan.
 30129. *Mije*. From Huetamo.
 30130. *Cimarron*. From Tangancicuaro.
 30131. *Cayote*. From Tangamandapio.
 30132. *Cimarron*. From Tingambato.

30133. MEDICAGO SATIVA L.**Alfalfa.**

From Nemingha, via Tamworth, New South Wales, Australia. Presented by Mr. T. G. Adamson. Received March 16, 1911.

"This lucern has a big, broad leaf and is a vigorous grower." (*Adamson.*)

30137. EUCOMMIA ULMOIDES Oliver.**Tu-chung.**

From China. Procured by Mr. E. H. Wilson and purchased from Prof. C. S. Sargent, Arnold Arboretum, Jamaica Plain, Mass. Received March 17, 1911.

(Wilson No. 383.) See No. 21782 for previous introduction and description.

This tree has proved hardy as far north as Boston, Mass.

30138. VACCINIUM VITIS-IDAEA L.**Cowberry.**

From Christiania, Norway. Presented by Prof. N. Wille, Botanical Gardens. Received March 18, 1911.

Procured for the breeding experiments of Mr. Frederick V. Coville.

30139. DIOSPYROS TESSELLARIA Poir.**Ebony.**

From the island of Mauritius. Presented by Mr. G. Regnard, Port Louis, Mauritius. Received March 20, 1911.

"The true black ebony of Mauritius." (*Regnard.*)

See No. 27494 for previous introduction.

30140. PUERARIA TUBEROSA (Roxb.) DC.

From India. Presented by Maj. A. T. Gage, superintendent, Botanic Gardens, Sibpur, Calcutta, India. Received March 21, 1911.

Distribution.—Tropical slopes of the western Himalayas, ascending to 4,000 feet in Kumaon, and on the hills in the western peninsula of India.

30141 to 30153.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, March 18, 1911.

Cuttings of the following:

30141. VITIS VINIFERA L.**Grape.**

From Khotan, Chinese Turkestan. "(No. 802, November 25, 1910.) A table variety called *Kizil-uzum*. Bunches of medium size; berries small to medium, of a pale-red transparent color, taste watery sweet. It is a keeper and shipper, but does not excel in anything in particular except in being able to stand considerable alkali in the soil. Of value to grow as a home grape in desert regions under irrigation. To be pruned like No. 30042." (*Meyer.*)

30141 to 30153—Continued.

30142. *VITIS VINIFERA* L.

Grape.

From Khotan, Chinese Turkestan. "(No. 833, November 26, 1910.) A table variety called *Yar-bachi*. Bunches large; berries of elongated shape, blue-black color, sweet taste; medium early; not a keeper or shipper. To be pruned with long wood to insure greatest fruitfulness." (Meyer.)

30143. *FRAXINUS* sp.

Ash.

From Yarkand, Chinese Turkestan. "(No. 871, December 18, 1910.) An ash of peculiar growth found in an old graveyard where it never received any irrigation water. To be tested as an ornamental tree in those regions of the United States where the rainfall is slight and the summer temperatures high." (Meyer.)

30144. *SALIX* sp.

Willow.

From near Langar, Chinese Turkestan. "(No. 876, November 28, 1910.) A willow called *Khattu suchet*. A peculiar weeping willow, able to grow in rather sandy and in alkaline soils. The weeping properties do not seem to develop in this tree until it has formed a good trunk. The natives often pollard it and the tree then assumes a more regular shape." (Meyer.)

30145. *SALIX* sp.

Willow.

From Pustan Terek, Chinese Turkestan, elevation 7,000 feet above sea level. "(No. 877, December 29, 1910.) A willow called *Kizil suchet*. Found on moist places in a mountain valley at an elevation of over 6,000 feet above sea level. Mostly seen as a shrub, but when left alone grows into a small-sized tree. Branches very long and slender; bark of a bright, dark-red color. The twigs are remarkably pliable and form excellent tying and basketry material. Recommended as an ornamental and useful shrub for the northern regions of the United States." (Meyer.)

30146. *SALIX* sp.

Willow.

From near Langrü, Chinese Turkestan. "(No. 878, November 28, 1910.) A willow having a reddish bark and growing into a small-sized tree, found on sandy and alkaline wastes. Of value as a hedge plant and fuel supplier in alkaline and sandy regions." (Meyer.)

30147. *POPULUS NIGRA ITALICA* Duroi.

Lombardy poplar.

From Bas-lengar, Chinese Turkestan. "(No. 880, December 7, 1910.) Variety *fastigiata*. Called *Tagh terek*. This poplar, which sometimes grows to be very large, is seen everywhere in Chinese Turkestan, even in remote mountain villages. It seems that this fastigate variety has been developed here independent of other regions. The trees seen were all singularly free from galls or diseases. These cuttings may be tested to find out if they are not a hardier variety. They will do especially well in desert regions under irrigation." (Meyer.)

30148. *POPULUS* sp.

Poplar.

From Pustan Terek, Chinese Turkestan, elevation 7,000 feet above sea level. "(No. 882, December 28, 1910.) A wild poplar, called by the Kirghiz *Tagh terek*, meaning mountain poplar. Grows in stony wastes where there is underground water within reach. This variety has a particularly white bark on its young branches which makes it present a cheerful aspect in wintertime. Old trees grow a very thick bark, which is deeply and characteristically grooved. They do not make a very spreading head but are apparently built to resist strong winds. See No. 30149." (Meyer.)

30141 to 30153—Continued.

30149. *POPULUS* sp.

Poplar.

From Pustan Terek, Chinese Turkestan, elevation 7,000 feet above sea level. "(No. 883, December 28, 1910.) A wild poplar, called by the Kirghiz *Tagh terek*. This is the ordinary type of which No. 30148 is a variety. The wood of this tree is very heavy and is used apparently only for fuel. The leaves are quite variable, all forms being found from that of a narrow laurel leaf to a perfect triangular one. Recommended as a hardy ornamental tree for the colder and bleaker sections of the United States. The buds are covered with a fragrant resin. Perhaps it is *Populus laurifolia*." (Meyer.)

30150. *POPULUS ALBA* L.

White poplar.

From Tash-malak, Chinese Turkestan. "(No. 884, December 25, 1910.) A variety of the white poplar called *Hango terek*. The wood of this tree is burly and often beautifully marked, used to make bowls and basins, also for furniture making, turning, and carving work. The branches of this peculiar poplar show a number of rings, one above the other, as if the twigs had been girdled." (Meyer.)

30151. *SALIX* sp.

Willow.

From near Duya, Chinese Turkestan. "(No. 888, December 1, 1910.) A very small-leaved willow called *Kerek-suchet* growing on sandy wastes. The wood is quite hard, and the bark assumes a blackish color on old trees. It is sometimes planted as a hedge or windbreak on sandy, wind-swept fields. Recommended for these purposes in those parts of the United States where the rainfall is light, the summers hot, and the winters fairly cold." (Meyer.)

30152. *ULMUS* sp.

Elm.

From near Kashgar, Chinese Turkestan. "(No. 903, January 1, 1911.) A distinct variety of elm, heads naturally rather flat, spreading, and rounded off. Used as a shade and lumber tree, it being much used in cart manufacture. To be tested as a garden and park tree in semiarid regions and with slight irrigation in desert settlements." (Meyer.)

30153. *CARAGANA* sp.

From Pustan Terek, Chinese Turkestan, elevation 7,000 feet above sea level. "(No. 905, December 29, 1910.) A very low-growing species of *Caragana*, compact and very spiny, said to be covered with yellow flowers in early summer which are eaten by the Kirghiz. Native name of this plant, *Karagan*. Recommended as an ornamental garden and park shrub in semiarid regions and as a rockery shrub in moist localities." (Meyer.)

30154 to 30187. *RUBUS* spp.

From Vienna, Austria. Presented by Prof. Dr. R. von Wettstein, director, Botanical Gardens. Received March 17, 1911.

This collection of *Rubus* cuttings includes many of the rarer species of Europe and is introduced for varietal tests and especially for the breeding work of the Office of Crop Physiology and Breeding Investigations.

30154. *RUBUS ACHERUNTINUS* Tenore.

Distribution.—Along hedges and roadsides in northern Italy and in the Canton of Ticino, Switzerland.

30155. *RUBUS MOLUCCANUS* L.

Distribution.—From the central and eastern Himalayas in India southeastward throughout the Malay Archipelago.

30156. *RUBUS ANTIQUUS* Hort.

30154 to 30187—Continued.

30157. *RUBUS CORYLIFOLIUS* Smith.

Distribution.—Western Europe, from England and France southward to central Italy.

30158. *RUBUS ULMIFOLIUS BELLIDIFLORUS* (Koch) Focke.

Distribution.—Known only under cultivation.

30159. *RUBUS HIRTUS BAYERI* (Focke) Asch. and Graebn.

Distribution.—Slopes of the foothills and valleys of the Alps and Karpathian Mountains in Austria.

30160. *RUBUS BIFRONS* Vest.

Distribution.—Edges of woods and on hillsides in the vicinity of Minden, Germany, and of Jumet, Belgium.

30161. *RUBUS CAESIUS* L.

30162. $\times$ *RUBUS RETICULATUS* Kerner.

Considered to be a hybrid between *Rubus tomentosus* and *R. hirtus*.

30163. *RUBUS TOMENTOSUS* Borekh.

Distribution.—The countries bordering on the northern shore of the Mediterranean from France to Syria.

30164. *RUBUS CLUSII* Borb.

Distribution.—Known only from Hungary.

30165. *RUBUS VULGARIS* Weihe and Nees.

Distribution.—On plains and hillsides in southern Norway, in Denmark, and occasionally in England.

30166. *RUBUS COLEMANNI* Bloxam.

Distribution.—Apparently found in Leicestershire, England.

30167. *RUBUS DELICIOSUS* Torrey.

Distribution.—Canyons in the mountains of Colorado.

30168. *RUBUS DREJERI* Jens.

Distribution.—Along hedges and on the borders of woods in Scotland, northern England, and in Denmark.

30169. *RUBUS FRUTICOSUS* L.

30170. *RUBUS FOLIOSUS* Weihe and Nees.

Distribution.—England, Ireland, France, and southward to the Pyrenees and the Alps.

30171. *RUBUS GRAHAMI* Hort.

30172. *RUBUS JACQUINI* Hort.

30173. *RUBUS LEUCOSTACHYS* Schleicher.

Distribution.—In woods and thickets in Essex, Sussex, Hampshire, and Berkshire, England.

30174. *RUBUS VULGARIS LACINIATUS* (Wills.) Asch. and Graebn.

Distribution.—Known only under cultivation.

30175. *RUBUS LAMPROPHYLLUS* Gremli.

Distribution.—Alpine slopes in northern and western Switzerland and the adjacent provinces of Germany.

30176. *RUBUS MACROSTEMON* Focke.

Distribution.—England, France, Denmark, and southern Europe eastward to the Caucasus region.

30154 to 30187—Continued.**30177.** *RUBUS MUCRONATUS* Hort.**30178.** *RUBUS LINEATUS* Reinw.

Distribution.—On the slopes of the Himalayas at an elevation of 6,000 to 9,000 feet in the Province of Sikkim in northern India, and on the mountains of the island of Java.

30179. *RUBUS Plicatus* Weihe and Nees.

Distribution.—The Scandinavian Peninsula, Denmark, the British Islands, and northwestern France.

30180. *RUBUS RHAMNIFOLIUS* Weihe and Nees.

Distribution.—Southern Sweden, Denmark, northern England, and Scotland.

30181. *RUBUS squarrosus* Fritsch.

Distribution.—Described from cultivated plants apparently found in material received from Australia.

30182. *RUBUS SPRENGELII* Weihe.

Distribution.—England, Ireland, southern Denmark, and the northern part of France.

30183. *RUBUS sulcatus* Vest.

Distribution.—From England and the southern part of the Scandinavian Peninsula southward through Denmark and France to central Italy.

30184. *RUBUS thyrsanthus* Focke.

Distribution.—Southern Sweden, Denmark, and the northern provinces of the German Empire.

30185. *RUBUS tomentosus* Borckh.

Distribution.—See No. 30163.

30186. *RUBUS vestitus* Weihe and Nees.

Distribution.—England, Ireland, France, and Denmark.

30187. *RUBUS schmidelioides* A. Cunn.

Distribution.—In the lowland districts of the North and South Islands of New Zealand.

30189 and 30190. AGAVE POTOSINA × SISALANA. False sisal.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received March 20, 1911.

"In a crossing of the great agave of San Luis Potosi with sisal I obtained forms very interesting as textiles. The plants producing bulbils, it was very easy to fix the best variations obtained. The hybrids are very much more resistant to cold than the sisal. The fibers are more brilliant, finer, and more abundant. It will be an interesting false sisal." (*Trabut.*)

30189. Bulbils.**30190.** Seeds.**30191 to 30196.**

From Yachow, Szechwan, West China. Presented by Dr. Edgar T. Shields. Received February 23, 1911.

Seeds of the following; quoted notes by Dr. Shields:

30191 to 30194. *RAPHANUS SATIVUS* L.**Radish.****30191.** "Green skinned."**30193.** "Round red."**30192.** "Long red."**30194.** "Round white."

30191 to 30196—Continued.**30195.** DIOSPYROS KAKI L. f.**Persimmon.**

"Excellent fruit."

30196. ACTINIDIA CHINENSIS Planch.**Yang-taw.**

"A large vine bearing most delicious fruits that are hairy on the outside and contain lots of seed."

See No. 21781 for further description.

30197 to 30199. NICOTIANA TABACUM L.**Tobacco.**

From Cuba. Presented by Mr. E. W. Halstead. El Caimital Fruit Co., Los Palacios, Cuba. Received March 20, 1911.

Seeds of the following:

30197. From Pinar del Rio, Pinar del Rio Province.**30198.** From Los Palacios, Pinar del Rio Province.**30199.** From Holguin, Santiago de Cuba Province.**30200. MEDICAGO FALCATA L.****Siberian alfalfa.**

Collected in 1909 from specimens growing wild in lower Austria. Presented by Dr. Weinzirol, director, Imperial Seed-Control Station, Vienna, Austria. Received March 17, 1911.

30201. CITRUS sp.**Orange.**

From Rio de Janeiro, Brazil. Presented by Mr. Antonio Augusto Pereira da Fonseca. Received March 23, 1911.

Bahia.

Cuttings.

30206. SAMUELA CARNEROSANA Trelease.

From Mexico. Procured by Mr. Thomas W. Voetter, American consul, Saltillo, Mexico. Received March 23, 1911.

"The man who collected this seed stated that he sells much of it to local druggists, who grind it and sell it as a purgative. The fleshy covering of the seeds also has a purgative action when freely eaten." (*Voetter.*)

See No. 29521 for further description.

30207. CITRUS sp.**Sweet lemon.**

From Tobago Island, British West Indies. Presented by Mr. N. E. Coffey, Ancon Hospital, Ancon, Canal Zone, Panama. Received March 23, 1911.

Cuttings.

30208 to 30210.

From the plains of the island of Marajo, the great cattle country of the State of Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense, Para, Brazil. Received March 23, 1911.

Seeds of the following; quoted notes by Mr. Fischer:

30208. PARATHERIA PROSTRATA Griseb."Variety *pubescens*, here known as capim de marreca (duck grass). It is said to differ from the type in being annual; prefers the clay soils of the lowlands, where it is under water for half of the year or more, reproducing itself by seeds at the beginning of the summer, when it makes a fine green pasture not over a foot in height, surviving the long drought in the hard, baked, clay soil."*Distribution.*—Not previously known from any place outside of the island of Cuba.

30208 to 30210—Continued.**30209. ERAGROSTIS HYPNOIDES** (Lam.) B. S. P.

"This is known as 'barba de bode' (goat's beard). The habitat of this *Eragrostis* is similar to that of the other grass (S. P. I. No. 30208); it is, however, considered more nutritive and more savory than the latter."

30210. MIMOSA sp. (?)

"'Juquiry,' a legume that is considered both very fattening and sustaining; it is a weed, and for this reason should be watched."

30211 to 30214.

From Piracicaba, Brazil. Presented by Prof. Clinton D. Smith, Escola Agricola Pratica, "Luiz de Queiros." Received March 23, 1911.

Seeds of the following; quoted notes by Prof. Smith:

30211. MANGIFERA INDICA L.**Mango.**

"Seeds from a choice variety grown on the fazenda of Señor Grossi of Arraraquara, in this State. I have never eaten other mangos which approach them in excellence of flavor and absence of the turpentine odor and flavor."

30212. ANACARDIUM OCCIDENTALE L.**Cashew.**

"From the fruit of this they make a delightful drink called 'cajuada.'"

30213. ANNONA SQUAMOSA L.**Custard apple.**

"Seed from the best selected variety I could find."

30214. ANNONA SQUAMOSA L.**Custard apple.**

"'Áta,' a fruit that takes fully a year to mature."

30215. THAUMATOCOCCLUS DANIELLI (Bennett) Benth.

From Aburi, Gold Coast, West Africa. Presented by Mr. A. R. Gould, curator, Botanic Gardens, through Mr. W. T. D. Tudhope, Director of Agriculture. Received March 24, 1911.

"Said to be a very common plant on the Ivory Coast in virgin forests and on the sites of old plantations established in the forests. It is in certain places said to be characteristic of the clearings and underbrush of the forests. The white part of the arillus is extremely sweet, with a taste of licorice or saccharine. The gelatin (or mucilage) which surrounds the seed swells up in water and forms a great mass of gelatin, with the black seed in the middle, which gives it the appearance of frog eggs. The plant has the following native names: Bobo abi (Negau); Bobruidja, Bogridja (Bete d'Issia); Urugua meremne (Bakoura)." (*Extract from the Journal de Botanique.*)

"No use is made of the seeds in this colony, but the leaves are extensively used in packing fresh kola nuts to prevent them from drying." (*Tudhope.*)

Distribution.—The countries along the west coast of Africa from Sierra Leone and Liberia through Guinea to the region around the mouth of the Niger River.

30216. PITTOSPORUM MAYI Hort.

From Castlewellan, County Down, Ireland. Presented by Mr. Thomas J. Ryan, head gardener for Earl Annesley. Received March 24, 1911.

"This variety has proven quite hardy. I have planted about 300 yards of a hedge of it, grown from seed saved from the Castlewellan plants, on an estate near the sea-coast; they are now about 4 feet high and make a fine ornamental hedge. The only trouble with all the *Pittosporums* is transplanting. We find it safest to grow them in pots plunged in the open ground till they are finally placed out; this of course applies only to young stock. The variety *mayi* grows freely and quickly from seed and is a good stock to work other sorts on if necessary." (*Ryan.*)

30217 to 30221. ASPARAGUS spp.**Asparagus.**

From La Mortola, Ventimiglia, Italy. Presented by Prof. Alwin Berger, curator of the garden. Received March 23, 1911.

Seeds of the following:

30217. ASPARAGUS ACUTIFOLIUS L.

30218. ASPARAGUS COOPERI Baker.

Distribution.—On the wooded slope of Mount Boschberg, at an elevation of 2,800 to 4,000 feet, in the Somerset division of the central region of Cape Colony.

30219. ASPARAGUS CRISPUS Lam.

30220. ASPARAGUS OFFICINALIS L.

30221. ASPARAGUS SPRENGERI Rgl.

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus and also various forms for florists' use.

30222 to 30224.

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnación. Received March 24, 1911.

Seeds of the following; notes by Mr. Mead:

30222 and 30223. LAGENARIA VULGARIS Ser.

Gourd.

"This maté or small gourd is of the kind used hereabouts in conjunction with a bombilla in making the maté as used here for drinking the Paraguay tea (No. 29097). Plant seeds where there is a trellis for the vines to run on, and do not pick maté until fully ripened."

30224. ASTRONIUM URUNDEUVA (Allema) Engler.

Urunday.

"In Guarany this is known as *urundai-mi*. This is a tree very similar to quebracho, but preferable for building purposes, both in strength, durability, and because it is lighter in weight, but this particular variety works harder with tools. Specific gravity 1.172 to .917, tensile strength about 20,000 pounds to the square inch, and crushing strength of 14,000 pounds to the square inch. Its resistance to rot is of the best—in fact, its longevity is unknown, there being bridges in the old line of the Paraguay Central, built in the time of the elder Lopez in the sixties, the piles of which are sound to-day, the part below ground being almost petrified. Whenever a pile has had to be replaced it was because insects had eaten the part above ground, and in repairs the general rule is to excavate to the first splice and simply put a new piece on top. For heavy piling or foundation work when extreme durability and strength is required, bridge work, or, in fact, any heavy framing where freedom from splitting is a factor, I can recommend this wood highly, both from my own experience and that of others who have used it hereabouts for decades.

"Of the urunday, there are three classes: Blanca (white), colorado (red), and negra (black). This seed is of the latter kind, by far the best of the three; it has a grain interwoven, seemingly even at the rings, as it is impossible to split it in any direction, a very desirable attribute, but trying to the nerves of mechanics working same. The name is a misnomer, as the wood is colored like mahogany except that the rings are black, making when cut up a most magnificent wood for veneer purposes, especially for furniture, picture frames, or house finishing. In this class of work it will easily rival rosewood. The urunday is a native of subtropical climates, so it may possibly thrive in parts of the South or Southwestern States. It wants a black soil, rich in humus, and does best in lower levels of hills. It should grow to a height of 15 meters

30222 to 30224—Continued.

and trunk about 12 to 14 inches in 10 to 12 years. It never grows sound to a greater diameter than 20 inches; from that diameter up it is invariably hollow. In these parts this tree is a choice tidbit for bichos, or tree-loving insects, but its hardness would dull the bill of any insect you have except possibly the teredo, and of its resistance to that I have no knowledge."

Distribution.—Tropical woods in the provinces of Minas Geraes and Rio de Janeiro, Brazil, and in the vicinity of Oran in northern Argentina.

30225 to 30227.

From Diamantina, Brazil. Presented by Mr. E. G. Swain. Received March 23, 1911.

Seeds of the following; quoted notes by Mr. Swain:

30225. GARCINIA sp.

"A fruit called *Lemon de Matt*, which means 'Lemon of the woods.' This is a delicious fruit and grows on a fair-sized tree; would do well in the Southern States."

30226. CYDONIA OBLONGA Miller.

"Marmeleiro."

30227. VIGNA SESQUIPEDALIS (L.) W. F. Wight.

"Seed from a pod that was nearly 2 feet long. It is very good eaten green like string beans, or the beans alone when nearly dry."

30228. PHASEOLUS COCCINEUS L.

From San Jose, Costa Rica. Presented by Prof. C. Wercklé, Department of Agriculture. Received March 25, 1911.

"This *Phaseolus* bears scarlet flowers; it is a perennial species, and the roots, which are much like mandioca, are eaten, but only the first year and when the plant has been growing very quickly in rich soil; but it could be improved." (*Wercklé.*)

30230. POPULUS PRUINOSA Schrenk.

Poplar.

From Tiflis, Caucasus, Russia. Received from the Botanic Gardens (?), March 27, 1911.

Cuttings.

Distribution.—In the valley of the Ili River in central Asia.

30231 to 30267.

From Albano, Stockholm, Sweden. Presented by Dr. Veit Wittrock, Botanical Gardens. Received March 25, 1911.

Seeds of each of the following:

30231. TSUGA DIVERSIFOLIA (Maxim.) Mast.

Distribution.—Slopes of the mountains in the islands of Japan.

30232. DACTYLIS HISPANICA Roth.

Distribution.—Southern Europe, from Spain eastward through Italy to Croatia and Dalmatia.

See No. 17808 for previous introduction.

30233. PHLEUM MICHELII All.

Distribution.—Southern Europe, from the Austrian Alps through Croatia to Montenegro.

See No. 18486 for previous introduction.

30231 to 30267—Continued.**30234. BERBERIS CRETICA L.****Barberry.**

Distribution.—Saloniki, Macedonia, and Greece, and the islands of Crete, Samos, and Cyprus.

30235. BERBERIS SERRATA Koehne.**Barberry.**

Distribution.—Apparently known only under cultivation.

30236. SAMBUCUS RACEMOSUS L.

See No. 20114 for description.

30237. BETA VULGARIS CICLA L.

Distribution.—Along the coasts of England and Europe.

30238. BETA TRIGYNA Waldst. and Kit.**30239. BETA VULGARIS L.****30240. BETA VULGARIS L.**

Variety *aurea*.

30241. SPINACEA OLERACEA L.**Spinach.****30242. MELILOTUS ALTISSIMA Thuill.**

Distribution.—Europe and western Asia, extending from England, France, Germany, and Spain eastward to the region of the Altai Mountains.

30243. CLEMATIS ORIENTALIS L.

Distribution.—Temperate parts of southern Asia from Persia through northern India and China to Manchuria.

30244. CLEMATIS RECTA MANDSHURICA (Rupr.) Maxim

See No. 22620 for description.

30245. RHAMNUS FALLAX Boiss.

Distribution.—Alpine mountain slopes of southern Europe from Carniola southeastward through Dalmatia, Croatia, and Servia, to Greece.

30246. RHAMNUS CATHARTICUS L.**Purging buckthorn.**

Distribution.—Europe, western Asia, and northern Africa, extending from Sweden and Norway southward to Spain and eastward to the Altai Mountains.

30247. RHAMNUS ERYTHROXYLUM Pallas.

Distribution.—On exposed rocks and in sandy places in the Trans-Baikalian region of Siberia, in Dahurica, and in Mongolia.

30248. RHAMNUS FRANGULA L.**Alder buckthorn.**

Distribution.—Sweden and Norway eastward to the Ural Mountains, and southward to Spain and Asia Minor.

See No. 2179 for description.

30249. CRATAEGUS DOUGLASSII Lindl.

See No. 26255 for previous introduction.

30250. MALUS MEDWIETZKYANA Dieck.

See No. 27123 for previous introduction.

30251. MALUS PRUNIFOLIA (Willd.) Borekh.

See No. 27124 for previous introduction.

30252. MALUS RINGO Sieb.

See No. 27125 for previous introduction.

30253. MALUS SARGENTI Rehd.

Distribution.—A low shrub found in a brackish marsh in the vicinity of Mororan in the Province of Hokushu, Japan.

30231 to 30267—Continued.

- 30254.** *ROSA ALBA* L. **Rose.**
Variety graveolens.

Distribution.—France and Germany, and northern Italy; naturalized in England.

- 30255.** *ROSA BLANDA* Ait. **Rose.**
 See No. 28235 for previous introduction.

- 30256.** *ROSA CINNAMOMEA* L. **Rose.**
Distribution.—Throughout Europe from the Scandinavian Peninsula southward to the Alps and eastward to the Caucasus region and Armenia.

- 30257.** *ROSA* sp. **Rose.**

- 30258.** *ROSA RUBIGINOSA IBERICA* (Stev.) Boiss. **Rose.**
Distribution.—The Caucasus region of southeastern Russia and in northern Persia.

- 30259.** *ROSA JUNDZILLI* Besser. **Rose.**
Distribution.—From France eastward through southern Russia to Armenia.

- 30260.** *ROSA RUGOSA KAMCHATICA* (Vent.) Deyer. **Rose.**
Distribution.—Among the dry rocks in the Kamchatkan Peninsula. Cultivated in Europe since 1791.

- 30261.** *ROSA NUTKANA* Presl. **Rose.**
Distribution.—Northwestern North America, from British Columbia southward to northern California, Montana, and Utah.

- 30262.** *ROSA PISOCARPA* Gray. **Rose.**
Distribution.—Northwestern North America, from British Columbia southward to Oregon and Nevada.

- 30263.** *ROSA FERRUGINEA* Villars. **Rose.**
Distribution.—Slopes of the Pyrenees and the northern part of the Apennines and eastward to Servia.

- 30264.** *RUBUS AFFINIS* Weihe and Nees.
Distribution.—Southeastern Sweden, in England, and in northern and western France.

- 30265.** *RUBUS SULCATUS* Vest.
Distribution.—From the British Islands and the Scandinavian Peninsula southward through northern and central France to central Italy

See No. 30183 for previous introduction.

- 30266.** *TILIA PLATYPHYLLOS* Scop.
Distribution.—Throughout central and southern Europe.

- 30267.** *TILIA PLATYPHYLLOS* Scop.
Variety asplenifolia.

30268 to 30275.

From Port of Spain, Trinidad, British West Indies. Procured from Mr. H. Caracciolo, St. Joseph Nurseries. Received March 25, 1911.

Tubers of the following:

- 30268.** *DIOSCOREA* sp. **Yampie.**
"Cush-cush. This is the finest root we have. It cooks very mealy and is delicious." (*Caracciolo.*)

30268 to 30275—Continued.

"The flesh is very white and of high quality, similar to that of the yampies of the Canal Zone and Jamaica (Nos. 29540 and 30091). The external appearance of the tubers is not quite so good as that of the variety from the Canal Zone, but is better than that of the Jamaica variety. The skin, under the surface, is pink or purplish. The size and form of the tubers received varied considerably. The largest weighed over 8 ounces." (R. A. Young.)

30269. *Dioscorea* sp.

Yam.

"A yam of good quality. The flesh is perfectly white and is mealy when cooked." (R. A. Young.)

30270. *Xanthosoma* sp.

Yautia.

Called *tannia* by Mr. Caracciolo.

"The tubers are large, sometimes weighing 1 pound, usually club shaped, have purplish-red sprouts, and are of good quality. The flesh when baked is much like that of a very white and mealy potato." (R. A. Young.)

30271. *Colocasia* sp.

Dasheen.

"Some of the corms or rootstocks received were much elongated and very large, single specimens weighing up to 5½ pounds. These large corms had evidently grown continuously for about two years. Both corms and tubers are of good quality, and when baked are white and mealy. They are slightly acid when raw. The corm is scarcely different from the tuber in quality, although it is a trifle drier." (R. A. Young.)

30272. *Colocasia* sp.

Dasheen.

"Chinese eddo. This is eaten also, but not in large quantities." (Caracciolo.)

"The corms and tubers are nonacid and are of fair quality. When baked the flesh is mealy and white, except that in the corms it is sometimes slightly violet colored." (R. A. Young.)

30273. *Colocasia* sp.

Taro.

Malanga. "This is not much liked here, as it scratches the mouth; but if dried for a day or two before cooking, it has not this effect." (Caracciolo.)

30274. *Dioscorea* sp.

Yampie.

"A purple-fleshed variety found among the white-fleshed tubers (No. 30268) received from the same source. The external appearance of the varieties was identical." (R. A. Young.)

30275. *Canna* sp.

"*Perica Guaro*. This is the Spanish name, but the natives call it 'toloman', others 'arrowroot'." (Caracciolo.)

30276 to 30297.

From Paris, France. Presented by the Museum of Natural History. Received March 27, 1911.

Seeds of the following, procured for testing and breeding work:

30276. *Phleum pratense* L.

Timothy.

30277. *Phleum paniculatum* Huds.

30278. *Phleum paniculatum* Huds.

30279. *Platycodon grandiflorum* (Jacq.) DC.

Variety *autumnale*.

30280. *Coriaria myrtifolia* L.

Distribution.—The countries along the northern shore of the Mediterranean from Spain to Greece, excepting Italy.

30276 to 30297—Continued.**30281. XANTHOCERAS SORBIFOLIA** Bunge.

See Nos. 18264 and 22457 for previous introductions.

30282. BERBERIS CANADENSIS Miller.**Barberry.****30283. CHENOPODIUM AMARANTICOLOR** Coste and Reynier.**30284. BETA TRIGYNA** Waldst. and Kit.**30285. ARALIA CACHEMIRICA** Decaisne.

Distribution.—A lax shrub found on the temperate slopes of the Himalayas at an altitude of 6,000 to 12,000 feet, between Sikkim and Kashmir in northern India.

30286. AUCUBA HIMALAICA Hook. f. and Thoms.

Distribution.—Damp places on the slopes of the Himalayas at an altitude of 6,000 to 9,000 feet, in the provinces of Bhutan and Sikkim, northern India.

30287. CORNUS BAILEYI Coult. and Evans.**30288. CORNUS BRETSCHEIDERI** Henry.

Distribution.—The Province of Chihli in northern China and in the southern part of Mongolia.

30289. CRATAEGUS AMBIGUA Becker.**Hawthorn.**

Distribution.—In the vicinity of Sarepta in the valley of the Volga in south-eastern Russia.

30290. CRATAEGUS KOROLKOWI Regel.**Hawthorn.**

Distribution.—The vicinity of Peking, China.

30291. CRATAEGUS PENTAGYNA Waldst. and Kit.**Hawthorn.**

Distribution.—From Hungary and Servia eastward through the Caucasus region to northern Persia.

30292. COTONEASTER PYRACANTHA (L.) Spach.

Variety *lalandii*.

30293. CRATAEGUS sp.**Hawthorn.****30294. CRATAEGUS TANACETIFOLIA** (Poir.) Persoon.**Hawthorn.**

Distribution.—Slopes of the mountains in eastern Cappadocia and northern Armenia.

30295. CRATAEGUS TOMENTOSA L.**Hawthorn.****30296. MELILOTUS ITALICA** (L.) Lam.**30297. JUGLANS LAVELLEI** Dode.**30298. PERILLA FRUTESCENS** (L.) Britt.

From Utsunomiya, a city in the interior of Japan, about 80 miles distant from Yokohama. Procured by Mr. E. G. Babbitt, American vice consul general in charge, Yokohama, Japan. Received March 27, 1911.

"Yegoma. It is from this that the perilla oil, commonly known as *Yeno-abura*, or oil of yegoma, is obtained." (*Babbitt*.)

30299. AMYGDALUS PERSICA L.**Peach.**

From Shunking, Szechwan, China. Presented by Rev. A. E. Evans. Received March 28, 1911

Cuttings.

30300. ASPARAGUS AFRICANUS Lam.**Asparagus.**

From Cedara, Natal, South Africa. Presented by Mr. E. R. Sawyer, director, Division of Agriculture. Received March 28, 1911.

Introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus, and also various forms for florists' use.

30301. NICOTIANA TABACUM L.**Tobacco.**

From the vicinity of Remedios, Cuba. Presented by Prof. Ramón García Osés, director, Estacion Experimental Agronómica, Santiago de las Vegas, Cuba. Received March 29, 1911.

30302 to 30306.

From Comendador, Dominican Republic. Presented by Mr. M. E. Beall. Received March 27, 1911.

The following material; notes by Mr. Beall:

30302. XANTHOSOMA sp.**Yautia.**

"This is a much-prized vegetable here, producing large bulbs, white, sweet, starchy, the best substitute we have for the Irish potato. This is also a handsome foliage plant, giving forth large leaves like the elephant's ears (*Caladium esculentum*), with much the same habit of growth. In the South, after adorning the lawn until fall the folks can eat the bulbs and find them very good."

Bulbs.

30303. ANACARDIUM OCCIDENTALE L.**Cashew.**

"An acid fruit (two kinds, red and yellow) of very agreeable taste. The seeds when roasted are better than peanuts, but not as good as chestnuts. This may prove to be a different variety from what you have had. The tree grows rapidly and produces much fruit. I make excellent jelly of it."

Seeds.

30304. CHRYSOPHYLLUM CAINITO L.**Star-apple.**

"*Caimito*. A large tree of rather slow growth with a delicious, round, green fruit about the size of an orange. The leaves are dark, glossy green above and bronze on the under side, ovate in shape. The fruit is good to eat and the tree a delight to the eye."

30305. CUCURBITA PEPO L.**Pumpkin.**

"*Auyama*. A good edible variety, but the vines run over large areas. It withstands well both wet and dry weather."

30306. LAGENARIA VULGARIS Ser.**Gourd.**

"An immense gourd grown here. I have seen them half as large as a barrel. The natives use them with the point cut off for water jars. Cut through from top to bottom they are used for dish pans and bathtubs. If they mature in the Gulf States they will be valuable to the colored folks, for here they are indispensable."

30308 to 30364.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, March 24, 1911.

Cuttings of the following:

30308. PYRUS sp.**Pear.**

From Khotan, Chinese Turkestan. "(No. 804, November 25, 1910.) A pear called *Amoot*. This is of medium size, knobby exterior, yellow color;

30308 to 30364—Continued.

meat soft and melting; ripe about early August; not of keeping qualities. Suitable for regions where hot, long summers prevail." (*Meyer.*)

30309. MALUS sp.**Apple.**

From Khotan, Chinese Turkestan. "(No. 805, November 25, 1910.) An apple called *Muzalma*. Of medium size; color yellowish green, of a peculiar glassy texture; taste sweet, but somewhat insipid; of good keeping qualities; ripens in autumn; able to withstand considerable drought and alkali." (*Meyer.*)

30310. PRUNUS ARMENIACA L.**Apricot.**

From Khotan, Chinese Turkestan. "(No. 806, November 25, 1910.) An apricot called *Yannana uruk*. Fruits medium large, dark red on one side, pale yellow on the other; taste fresh sweet, kernel sweet; rather a late variety.

"The Turkestan varieties of apricots seem all to be able to stand a fair amount of alkali in the soil and are not hurt by great fluctuations in temperature." (*Meyer.*)

30311. PRUNUS ARMENIACA L.**Apricot.**

From Khotan, Chinese Turkestan. "(No. 807, November 25, 1910.) An apricot called *Guama uruk*. Fruits large, of pale-yellow color; taste fresh sweet; late in ripening. Stone and kernel large, the latter sweet and very much sold in the markets of Chinese Turkestan, taking the place of almonds as sold in other countries." (*Meyer.*)

30312. PRUNUS ARMENIACA L.**Apricot.**

From Khotan, Chinese Turkestan. "(No. 808, November 25, 1910.) An apricot called *Kizil uruk*, meaning red apricot. Fruits medium large, of red color, late in ripening; kernel sweet. This can apparently stand more cold, alkali, and neglect than any other variety of apricot." (*Meyer.*)

30313. PRUNUS ARMENIACA L.**Apricot.**

From Khotan, Chinese Turkestan. "(No. 809, November 25, 1910.) An apricot called *Ak-uruk*, meaning white apricot. Fruits rather small, of pale-yellow color, early; can be used for drying; kernel sweet." (*Meyer.*)

30314. AMYGDALUS COMMUNIS L.**Almond.**

From Khotan, Chinese Turkestan. "(No. 810, November 25, 1910.) An almond called *Badam*. Fruits small, hard-shelled. This variety is able to stand much drought, alkali, and neglect." (*Meyer.*)

30315. PRUNUS DOMESTICA L.**Prune.**

From Khotan, Chinese Turkestan. "(No. 811, November 25, 1910.) A prune called *Alibuchara*. Fruits large, of deep-blue color, and subacid flavor; stands drought and alkali." (*Meyer.*)

30316. PRUNUS CERASUS L.**Cherry.**

From Khotan, Chinese Turkestan. "(No. 812, November 25, 1910.) A sour cherry called *Gilas*. Fruits small, of dark-red color, late in ripening. Very prolific; stands considerable alkali in the soil. The fruits are much used by the Russians in western Turkestan for compotes and jellies. Recommended for desert regions under irrigation." (*Meyer.*)

30317. PRUNUS TOMENTOSA Thunb.**Bush cherry.**

From Khotan, Chinese Turkestan. "(No. 813, November 25, 1910.) The red Chinese plum-cherry or bush cherry called in Turki, *Kizil genesta*. Fruits about as large as garden peas; very early; stand drought and alkali quite well.

30308 to 30364—Continued.

Of value, perhaps, in hybridization experiments. In Chinese Turkestan this fruit is propagated by division, but in North China it is budded on *Amygdalus davidiana*, and grows much faster in the latter case and stands drought and transplanting much better than on its own roots." (Meyer.)

30318. PRUNUS TOMENTOSA Thunb.**Bush cherry.**

From Khotan, Chinese Turkestan. "(No. 814, November 25, 1910.) A white variety of the Chinese plum-cherry, called in Turki, *Ak-genesta*. See remarks under No. 30317." (Meyer.)

30319. AMYGDALUS PERSICA L.**Peach.**

From Khotan, Chinese Turkestan. "(No. 816, November 25, 1910.) A peach called *Yama shabdalah*. Fruits large, of greenish color, juicy and sweet; early; apparently clingstone." (Meyer.)

30320. PRUNUS sp.**Plum.**

From Khotan, Chinese Turkestan. "(No. 820, November 25, 1910. A plum called *Kizil gilis*. This variety is red, of medium size; used dry and fresh; able to stand considerable drought." (Meyer.)

30321. PRUNUS ARMENIACA L.**Apricot.**

From Khotan, Chinese Turkestan. "(No. 821, November 25, 1910.) An apricot called *Kizil yananna uruk*. Fruits red, large, said to be of fine flavor. See remarks under No. 30310." (Meyer.)

30322. PRUNUS sp.**Plum.**

From Khotan, Chinese Turkestan. "(No. 822, November 25, 1910.) A dark-blue plum called *I-na-low*. Fruits of medium size, and acid taste. Mostly used in meat stews and as compotes." (Meyer.)

30323. PRUNUS ARMENIACA L.**Apricot.**

From Khotan, Chinese Turkestan. "(No. 823, November 25, 1910.) An apricot called *Ak-uruk*. Said to be distinct from No. 30313, as the fruits are larger and of finer flavor." (Meyer.)

30324. AMYGDALUS PERSICA L.**Peach.**

From Khotan, Chinese Turkestan. "(No. 824, November 25, 1910.) A peach called *Ak-shabdalah*. Fruits large, white, juicy, and aromatic; an early ripener." (Meyer.)

30325. AMYGDALUS PERSICA NECTARINA Ait.**Nectarine.**

From Khotan, Chinese Turkestan. "(No. 825, November 25, 1910.) *Fructi glabra*. A nectarine called *Dagatch*. Fruits red, of medium size, clingstone. This variety is of good keeping and shipping qualities." (Meyer.)

30326. MALUS sp.**Apple.**

From Khotan, Chinese Turkestan. "(No. 826, November 25, 1910.) An apple called *Muz-alma*. Said to be a large variety of No. 30309." (Meyer.)

30327. MALUS sp.**Apple.**

From Khotan, Chinese Turkestan. "(No. 827, November 25, 1910.) An apple called *Kizil alma*. Fruits medium large, red throughout; taste sweet, somewhat insipid. The trees do not grow to very large dimensions, but are able to stand drought, alkali, and neglect. To be experimented with in hot desert regions under irrigation." (Meyer.)

30308 to 30364—Continued.

30328. *MALUS* sp.

Apple.

From Khotan, Chinese Turkestan. "(No. 828, November 25, 1910.) An apple called *Ak-alma*. Fruits of medium size, often large; color white; taste subacid, of fairly good flavor. Remarks under No. 30327 apply also to this number." (Meyer.)

30329. *PYRUS CHINENSIS* Lindl. (?)

Pear.

From Khotan, Chinese Turkestan. "(No. 829, November 25, 1910.) A pear called *Nanshi*'pt. This is the celebrated Kutcha pear. It is of medium-large size, round-oval shape, and canary-yellow color with slight reddish blush. The flesh is of granular structure, fresh-sweet taste, and remarkably juicy. It is of excellent keeping and shipping qualities. To be tested in desert regions under irrigation." (Meyer.)

30330. *MORUS NIGRA* L.

Black mulberry.

From Khotan, Chinese Turkestan. "(No. 830, November 25, 1910.) A mulberry called *Shatoot*. Berries large, of dark violet-black color, very persistent in their habits, almost every berry having to be picked by hand; taste fresh subacid; ripens from early August until the end of September. The trees are mostly grafted 1 meter above the ground so that the fruits may be easily gathered. Recommended as a home fruit in desert regions under irrigation." (Meyer.)

30331. *JUGLANS REGIA* L.

Walnut.

From Khotan, Chinese Turkestan. "(No. 831, November 25, 1910.) A walnut called *Yang-ak*. A rather large variety; shells medium soft. Walnuts are grown in Chinese Turkestan at elevations from 4,000 to 7,000 feet above sea level. They are able to stand a fair amount of drought and alkali, and do not suffer from great extremes in temperatures. There are large regions in the southern Rocky Mountains where in all probability very profitable orchards could be established." (Meyer.)

30332. *AMYGDALUS PERSICA NECTARINA* Ait.

Nectarine.

From Karghalik, Chinese Turkestan. "(No. 834, December 11, 1910.) Variety *fructi glabra*. A nectarine called *Anar-shabdalah*. Fruits rather small, whitish pink in color, and of sweet, aromatic flavor. This is a medium-late ripener and a rare local variety." (Meyer.)

30333. *AMYGDALUS PERSICA* L.

Peach.

From Shagra-bazar, Chinese Turkestan. "(No. 836, December 23, 1910.) A peach called *Serech-shabdalah*. Fruits very large, of yellow color throughout; meat very firm; clingstone. Stands shipping well, but does not keep long; late in ripening (October)." (Meyer.)

30334. *AMYGDALUS PERSICA NECTARINA* Ait.

Nectarine.

From Shagra-bazar, Chinese Turkestan. "(No. 837, December 23, 1910.) Variety *fructi glabra*. A nectarine called *Kizil-dagatch*. Fruits small, red; medium early." (Meyer.)

30335. *AMYGDALUS PERSICA NECTARINA* Ait.

Nectarine.

From Upal, Chinese Turkestan. "(No. 838, December 26, 1910.) Variety *fructi glabra*. A nectarine called *Ak-tagatch*. Fruits large, white; a late ripener; of good keeping and shipping qualities. As Upal is about 5,000 feet above the sea, this nectarine may prove to be hardier than those from lower levels." (Meyer.)

30308 to 30364—Continued.

30336. *AMYGDALUS PERSICA NECTARINA* Ait.

Nectarine.

From Yarkand, Chinese Turkestan. "(No. 839, December 19, 1910.) Variety *fructi glabra*. A nectarine called *Ak-dagatch*. Fruits medium-sized, of white color; clingstone; late in ripening; of good keeping and shipping qualities." (Meyer.)

30337. *AMYGDALUS PERSICA* L.

Peach.

From Shagra-bazar, Chinese Turkestan. "(No. 840, December 24, 1910.) A peach called *Kok-shabdalah*. Fruits medium large, of greenish-white color; taste sweet; medium late; not a keeper. A local variety." (Meyer.)

30338. *AMYGDALUS PERSICA* L.

Peach.

From Yarkand, Chinese Turkestan. "(No. 841, December 18, 1910.) A peach called *Taka-shabdalah*. Fruits very large, of whitish color with a slight blush; late in ripening; can be kept for several weeks; locally considered a fine variety." (Meyer.)

30339. *AMYGDALUS PERSICA* L.

Peach.

From Karawag, Chinese Turkestan. "(No. 844, December 10, 1910.) A peach called *Ak-shabdalah*. Fruits large, white in color; flavor very sweet and pleasing; early in ripening." (Meyer.)

30340. *AMYGDALUS PERSICA* L.

Peach.

From Karawag, Chinese Turkestan. "(No. 845, December 10, 1910.) A peach called *Ais-shabdalah*. Fruits large, pinkish white; meat firm, sweet; clingstone. It is said here that it can be kept for several months." (Meyer.)

30341. *AMYGDALUS PERSICA NECTARINA* Ait.

Nectarine.

From Upal, Chinese Turkestan. "(No. 846, December 26, 1910.) Variety *fructi glabra*. A nectarine called *Kivil tagatch*. Fruits large, red throughout; meat firm; of good keeping and shipping qualities. See remarks under No. 30335 as to hardness." (Meyer.)

30342. *PRUNUS ARMENIACA* L.

Apricot.

From Karawag, Chinese Turkestan. "(No. 849, December 10, 1910.) An apricot called *Yannala uruk*. Fruits large, red in color; ripe in July; kernels sweet. A very vigorous grower." (Meyer.)

30343. *PRUNUS ARMENIACA* L.

Apricot.

From Karawag, Chinese Turkestan. "(No. 850, December 10, 1910.) A local variety of apricot called *Kayu-pomak uruk*. Fruits large, red; ripening the end of June." (Meyer.)

30344. *PRUNUS ARMENIACA* L.

Apricot.

From Burya-Lyang, Chinese Turkestan. "(No. 851, December 8, 1910.) An apricot called *Kara-yuk-pomak uruk*. Fruit large, dark red, very sugary; ripens medium early; can be dried and kept." (Meyer.)

30345. *PRUNUS ARMENIACA* L.

Apricot.

From Karawag, Chinese Turkestan. "(No. 852, December 10, 1910.) An apricot called *Ak-yarlik uruk*. Fruits large, of pale color; ripens in July. A local variety." (Meyer.)

30346. *PRUNUS ARMENIACA* L.

Apricot.

From Tash-malah, Chinese Turkestan. "(No. 853, December 24, 1910.) An apricot called *Ak-uruk*. Fruits large, of pale-yellow color; ripens the latter part of July; can be dried; kernels sweet. This particular variety is considered locally to be extra good." (Meyer.)

30308 to 30364—Continued.

30347. *PRUNUS ARMENIACA* L.

Apricot.

From Karawag, Chinese Turkestan. "(No. 855, December 10, 1910.) A local variety of apricot called *Ghondak-uruk*. Fruits of medium size, blood red in color; very early." (*Meyer*.)

30348. *PRUNUS ARMENIACA* L.

Apricot.

From Tash-malah, Chinese Turkestan. "(No. 856, December 24, 1910.) A local variety of apricot called *Anjan-uruk*. Fruits medium large, red; a late ripener." (*Meyer*.)

30349. *PRUNUS DOMESTICA* L.

Prune.

From Yarkand, Chinese Turkestan. "(No. 857, December 18, 1910.) A large variety of prune called *I-nar-low*. Fruits good sized, deep blue in color; late in ripening; used stewed with meat as a compote and also as a sweetmeat. To be tested in desert regions under irrigation." (*Meyer*.)

30350. *PRUNUS DOMESTICA* L.

Prune.

From Yarkand, Chinese Turkestan. "(No. 858, December 18, 1910.) A prune called *I-nar-low*. Smaller than No. 30349, otherwise the same remarks apply to it." (*Meyer*.)

30351. *PYRUS CHINENSIS* Lindl. (?)

Pear.

From Yarkand, Chinese Turkestan. "(No. 859, December 18, 1910.) A pear called *Nanshi'*pt. Fruits large to very large, of greenish-yellow color, somewhat blotched with green patches; flesh granular, but melting when fully ripe; taste fresh sweet; a late ripener; can be kept for several months. Stands extremes of temperatures well; to be tested under irrigation in desert regions." (*Meyer*.)

30352. *PYRUS CHINENSIS* Lindl. (?)

Pear.

From Karawag, Chinese Turkestan. "(No. 860, December 10, 1910.) A pear called *Nanshi'*pt. Fruits large, of round-oblong shape; color bright yellow; flesh somewhat gritty, but of fresh-sweet taste and good flavor; a good keeper. To be tested like the other numbers." (*Meyer*.)

30353. *MALUS* sp.

Apple.

From Karawag, Chinese Turkestan. "(No. 861, December 10, 1910.) An apple called *Muz-alma*, meaning ice apple; apparently the same as No. 30309. When the trees get old they spread considerably, and their branches become long and slender." (*Meyer*.)

30354. *PUNICA GRANATUM* L.

Pomegranate.

From Karawag, Chinese Turkestan. "(No. 864, December 10, 1910.) A pomegranate called *Atchiek*. Fruits very large, often the size of a child's head; color bright red; taste sour. A very ornamental fruit, excellent for display in the windows of fruit stores; can be kept and shipped with great facility." (*Meyer*.)

30355. *PRUNUS ARMENIACA* L.

Apricot.

From Khanaka, Chinese Turkestan, Oasis of Sandju. "(No. 890, December 3, 1910.) An apricot called *Kizil uruk*; can be used dried. The climate in Khanaka, which is about 6,000 feet above sea level, is so cool that melons, grapes, and peaches do not ripen here. This variety of apricot manages to ripen, however, toward the end of August. For this reason it deserves to be given a thorough test, especially in the western parts of the United States; also to be tried in hybridization experiments with native plums, so as to create new

30308 to 30364—Continued.

strains of garden fruits fit to stand severe cold. The wild apricots from Manchuria and northern Chosen might be taken for stocks, and native hardy plums might also be tested for this purpose.

"On the grounds of the experiment station at Madison, Wis., there stands a large apricot tree, perhaps 40 years old, which came from central Asia, and this fact seems to show that apricots are less tender than they are supposed to be." (Meyer.)

30356. PRUNUS sp.**Plum.**

From Kashgar, Chinese Turkestan. "(No. 891, January 10, 1911.) A plum called *Alutch*; apparently a very rare and probably new central Asian variety, obtained from the garden of the Hon. Geo. Macartney, British consul at Kashgar. The fruits are medium large, of golden-yellow color, fine flavor; clingstone; ripens early (latter part of July); can be kept for a few months. They are excellent for preserves and jellies." (Meyer.)

30357. AMYGDALUS PERSICA L.**Peach.**

From Kashgar, Chinese Turkestan. "(No. 892, January 10, 1911.) A large, red, freestone peach, fine flavored; a medium-late ripener, and a most prolific bearer. Obtained from the same source as No. 30356." (Meyer.)

30358. AMYGDALUS PERSICA L.**Peach.**

From Kashgar, Chinese Turkestan. "(No. 893, January 10, 1911.) A large, pale reddish, freestone peach of very fine flavor; medium-late ripener; not a keeper. Obtained like No. 30356. (Meyer.)

30359. AMYGDALUS PERSICA NECTARINA Ait.**Nectarine.**

From Kashgar, Chinese Turkestan. "(No. 894, January 10, 1911.) Variety *fructi glabra*. A very large, red, clingstone nectarine; late ripener; can be kept for several weeks after being fully ripe. Obtained like No. 30358." (Meyer.)

"These three preceding numbers were especially recommended to me by Mr. Macartney for their excellence." (Meyer.)

30360. PYRUS CHINENSIS Lindl.**Pear.**

From Kashgar, Chinese Turkestan. "(No. 895, January 11, 1911.) A small, angular-shaped, bright-yellow pear called *Kuttera amoot*. Flesh soft, melting, and of good flavor; ripens in early August and lasts only a few weeks; not a keeper. The trees are of a rather spreading growth and require considerable space to do well. Obtained from the garden of the Swedish Missionary Society at Kashgar." (Meyer.)

30361. PYRUS CHINENSIS Lindl.**Pear.**

From Kashgar, Chinese Turkestan. "(No. 896, January 11, 1911.) A pear called *Kok-amoot* or green pear. This grows to be very large and is of an irregular, knobby shape; green in color; texture gritty. Not edible when hard, but when soft its flesh becomes palatable; has good keeping and shipping qualities. May be used in breeding experiments. Obtained like No. 30360." (Meyer.)

30362. PRUNUS TOMENTOSA Thunb.**Bush cherry.**

From Kashgar, Chinese Turkestan. "(No. 897, January 11, 1911.) A plum-cherry called *Ak-genesta*. This is a larger variety than the one sent under No. 30318, otherwise the same remarks apply to it. Obtained like No. 30360." (Meyer.)

30308 to 30364—Continued.**30363. PRUNUS TOMENTOSA Thunb.****Bush cherry.**

From Kashgar, Chinese Turkestan. "(No. 898, January 11, 1911.) A plum-cherry called *Kizil genesta*. This is a larger and more vigorous variety than the one sent under No. 30317, otherwise the same remarks apply to it. Obtained like No. 30360." (*Meyer*.)

30364. ULMUS CAMPESTRIS L.**Elm.**

From Kashgar, Chinese Turkestan. "(No. 900, January 11, 1911.) Variety *umbraculifera*. A grafted, globular form of elm called *Seda*. Much grown near mosques and in gardens of the rich. Forms a dense head of foliage; is able to stand drought and a fair amount of alkali quite well; recommended as an ornamental and shade tree of conventional outlines for desert regions under irrigation. Obtained like No. 30360." (*Meyer*.)

30365. DIOSPYROS TESSELLARIA Poir.

From Reduit, Mauritius. Presented by Mr. H. Boname, director, Agronomic Station. Received March 31, 1911.

"These seeds are very difficult to procure. The tree is not widely scattered and does not occur except in the mountains of certain localities, where the monkeys usually eat the fruits before their complete maturity." (*Boname*.)

30366. STRYCHNOS TONGA Gilg.

From Amani, German East Africa. Presented by the director, Biological Land Institute. Received March 29, 1911.

Introduced for trial compared with the other edible-fruited species of the genus, some of which will probably prove excellent shippers.

Distribution.—A tree found on the east coast of Africa in the vicinity of Quilimane in the Mozambique region, and in the vicinity of Pangani in the Zanzibar district.

30367. CITRUS DECUMANA (L.) Murr.**Pomelo.**

From Haiti. Presented by Commander Phillip Andrews, Navy Department, Washington, D. C. Received March 28, 1911.

(P. No. 50411.) A deep-yellow variety, very fine.

30370 to 30392.

From Tunis, Tunis. Presented by Mr. L. Guillochon, Jardin d'Essais de Tunis. Received March 31, 1911.

Seeds of the following, procured for experimental tests and breeding work:

30370. MIMOSA ACULEATICARPA Ortega (?)**30371. ACACIA CYANOPHYLLA Lindl.**

See No. 1793 for previous introduction.

Distribution.—The valley of the Swan River in West Australia.

30372. ACACIA EBURNEA (L.) Willd.

See No. 1799 for previous introduction.

Distribution.—Southern Asia, extending from Arabia and Afghanistan eastward through India to Ceylon.

30373. ACACIA LINIFOLIA (Vent.) Willd.

Distribution.—The valley of the Brisbane River in Queensland, and from Port Jackson to the Blue Mountains in New South Wales, Australia.

30370 to 30392—Continued.

30374. *ACACIA RETINODES* Schlecht.

See No. 6666 for previous introduction.

Distribution.—Grassy ridges and open valleys throughout the provinces of Victoria and South Australia in Australia.

30375. *ACACIA SPHAEROCEPHALA* Cham. and Schiecht.

Distribution.—In the vicinity of Vera Cruz, Mexico.

30376. *ACACIA ARABICA* (Lam.) Willd.

See No. 26162 for description.

30377. *ANNONA CHERIMOLA* Miller (?)

Cherimoya.

30378. *ASPARAGUS SPRENGERI* Regel.

Asparagus.

See Nos. 30011, 30015, and 30221 for previous introductions.

30379. *CASUARINA STRICTA* Dryand.

Coast she-oak.

Distribution.—Southwestern Australia, in the provinces of New South Wales, South Australia, and Victoria, and in Tasmania.

30380. *CASUARINA TORULOSA* Dryand.

Forest she-oak.

See No. 1304 for previous introduction.

Distribution.—In the valleys of Queensland, New South Wales, and South Australia.

30381. *CHENOPodium AMARANTICOLOR* Coste and Reynier.

See No. 30283 for previous introduction.

30382. *CUPRESSUS SEMPERVIRENS* L.

Evergreen cypress.

30383. *CUPRESSUS SEMPERVIRENS* L.

Evergreen cypress.

Variety *fastigiata*.

30384. *CUPRESSUS LUSITANICA* Miller.

Distribution.—Supposed to be a native of the vicinity of Goa, India; of general cultivation.

30385. *EUCALYPTUS GOMPHOCEPHALA* DC.

Towart gum.

See No. 2988 for description.

Distribution.—In the valleys of the Swan and Murchison rivers in West Australia.

30386. *GOURLEIA SPINOSA* (Mol.) Skeels.

See No. 24631 for description.

30387. *JACARANDA MIMOSIFOLIA* Don.

A shrub with purple flowers in large panicles.

Distribution.—From Brazil and Argentina.

30388. *CAESALPINIA GILLIESII* (Hook.) Wallich.

(*Poinciana gilliesii* Hook.)

See No. 3530 for previous introduction.

Distribution.—In the vicinity of Mendoza, western Argentina, in Uruguay, and Chile.

30389. *QUERCUS ILEX* L.

Evergreen oak.

See No. 3036 for description.

Distribution.—The countries of southern Europe, northern Africa, and western Asia bordering on the Mediterranean.

30370 to 30392—Continued.**30390.** *SOPHORA JAPONICA* L.

See No. 20093 for description.

30391. *SOPHORA SECUNDIFLORA* (Ort.) DC.

See No. 3212 for description.

30392. *ZIZIPHUS MAURITIANA* Lam.

See No. 28129 for previous introduction.

30393 to 30415.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, March 31, 1911.

Seeds of the following:

30393. *HORDEUM VULGARE HIMALAYENSE* Rittig.**Barley.**

From Serik-Kol, Chinese Turkestan. "(No. 1488a, January 10, 1911.) A small quantity of hull-less summer barley grown in a dry mountain valley at elevations from 7,000 to 9,000 feet above sea level. Obtained through the Hon. George Macartney, British consul at Kashgar." (Meyer.)

30394. *PISUM SATIVUM* L.**Pea.**

From Khotan, Chinese Turkestan. "(No. 1499a, November 26, 1910.) A green pea called *Puchok*. Grown on sandy and alkaline lands." (Meyer.)

30395. *MEDICAGO SATIVA* L.**Alfalfa.**

From Pustan Terek, Chinese Turkestan, altitude 6,000 to 7,000 feet. "(No. 1509a, December 30, 1910.) A yellow-flowering alfalfa, growing as a weed between wheat; called *Serech beda*, meaning yellow lucern. As the climate in the Pustan Terek region is very much like that of the Manitou region of Colorado, this plant might be tested in the Rocky Mountain regions." (Meyer.)

30396. *CITRULLUS VULGARIS* Schrad.**Watermelon.**

From Karawag, Chinese Turkestan. "(No. 1519a, December 10, 1910.) A watermelon of remarkable keeping qualities; ripens toward the end of September and can be kept until May; of medium size, round-oval shape; very thick rind; dark sea green in color; slightly ribbed near peduncle; color of flesh salmon red; taste fresh sweet; seeds large, white with two black spots at the tapering end. To be tested in the desert regions of the United States under irrigation." (Meyer.)

30397. *CITRULLUS VULGARIS* Schrad.**Watermelon.**

From San Kia, Chinese Turkestan. "(No. 1520a, November 17, 1910.) A large variety of watermelon. Shape round; rind medium thick; of light-green color; flesh pale red; of fresh-sweet taste; seeds large, black; possesses good keeping and shipping qualities. To be tested like the preceding number." (Meyer.)

30398. *CITRULLUS VULGARIS* Schrad.**Watermelon.**

From Kashgar, Chinese Turkestan. "(No. 1521a, January 28, 1911.) A watermelon of medium size; shape round; rind dark green, thick; flesh pale red, of fresh-sweet taste; seeds red; a late ripener; keeps well for several months. To be tested like the preceding numbers." (Meyer.)

30399. *CUCUMIS MELO* L.**Muskmelon.**

From Shagran-bazar, Chinese Turkestan. "(No. 1525a, December 23, 1910.) A small, round melon; ripens very early; flesh of greenish color, very sweet. Called *Nachika*." (Meyer.)

30393 to 30415—Continued.**30400. CUCUMIS MELO L.****Muskmelon.**

From Shagran-bazar, Chinese Turkestan. "(No. 1526a, December 23, 1910.) An early melon of small size and oval shape; flesh white and very sweet. Called *Ak-Kutchka*." (Meyer.)

30401. CUCUMIS MELO L.**Muskmelon.**

From Shagran-bazar, Chinese Turkestan. "(No. 1528a, December 23, 1910.) A rather large, oval-shaped, medium-late melon; rind yellowish green; flesh salmon red, of fresh-sweet taste. Possesses excellent shipping and keeping qualities; obtainable throughout the whole winter. Called *Serech yois*." (Meyer.)

30402. CUCUMIS MELO L.**Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1529a, January 28, 1911.) A winter melon of oval shape, medium large; rind green; flesh white, firm, and of fresh-sweet taste; a very good shipper and keeper. These melons are sold on the markets of Turkestan until May. Called *Yeis*." (Meyer.)

30403. CUCUMIS MELO L.**Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1531a, January 28, 1911.) A small melon, said to be the earliest of all. Flesh white; taste aromatic and sweet. Called *Kutchak kokchi*." (Meyer.)

30404. CUCUMIS MELO L.**Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1532a, January 28, 1911.) An early melon of medium size; flesh white, very sweet. Called *Mecca*." (Meyer.)

30405. CUCUMIS MELO L.**Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1533a, January 28, 1911.) A flat muskmelon; small; very early; flesh whitish, fragrant. Called *Khanalak*." (Meyer.)

30406. CUCUMIS MELO L.**Muskmelon.**

From Kashgar, Chinese Turkestan. "(No. 1534a, January 28, 1911.) A small, early ripening melon; flesh white; of very sweet, fresh taste. Called *Ak-kand*, meaning white sugar." (Meyer.)

30407. JUGLANS REGIA L.**Walnut.**

From Khotan, Chinese Turkestan. "(No. 1535a, November 24, 1910.) A very large, medium hard-shelled walnut. Walnuts in Turkestan are always propagated from seed, and there is a very great amount of variation to be observed in the size of the nuts and the habits of the various trees.

"See remarks made under No. 30331 in regard to possible localities for walnut orchards." (Meyer.)

30408. AMYGDALUS COMMUNIS L.**Almond.**

From Yarkand, Chinese Turkestan. "(No. 1536a, November 7, 1910.) A variety of almond imported from northern India and used for medicinal purposes. Called *Hindustan badam*. May be of value as a stock. It seems to be either a wild type or a very primitive strain." (Meyer.)

30409. PRUNUS sp.**Plum.**

From Khotan, Chinese Turkestan. "(No. 1542a, November 23, 1910.) A variety of plum called *Kayuk*. Eaten as a sweetmeat; also stewed with meats and made into compote. Able to stand extremes of temperatures and some alkali in the soil or irrigation water." (Meyer.)

30393 to 30415—Continued.**30410. PRUNUS DOMESTICA L.****Prune.**

From Kashgar, Chinese Turkestan. "(No. 1544a, January 11, 1911.) A small prune growing well on rather alkaline land. Used in sweetmeats and in compote." (*Meyer.*)

30411. ZIZIPHUS JUJUBA Miller.**Jujube.**

From Khotan, Chinese Turkestan. "(No. 1545a, November 24, 1910.) The Chinese date called *Tchi-lan*; sparingly grown here and there in Chinese Turkestan." (*Meyer.*)

30412. ELAEAGNUS ANGUSTIFOLIA L.**Oleaster.**

From Kashgar, Chinese Turkestan. "(No. 1547a, Jan. 28, 1911.) A large variety of oleaster; fruits pale orange in color. Recommended as a fruit tree for the home garden in arid and alkaline regions, supplying sweetmeats for the children." (*Meyer.*)

30413. BERBERIS sp.**Barberry.**

From Khotan, Chinese Turkestan. "(No. 1548a, Nov. 24, 1910.) The fruits of this barberry are sold on the market in Khotan under the name of *Zich*. They are used ground as a spice on rice, boiled with sugar and eaten as a compote, stewed with meats, and steeped in boiling water like tea and the beverage, with some sugar added, drunk as a refreshing summer draft. The plant is apparently able to stand great drought and heat. Recommended as an ornamental shrub in semiarid regions of America." (*Meyer.*)

30414. FRAXINUS sp.**Ash.**

From Khotan, Chinese Turkestan. "(No. 1551a, Nov. 26, 1910.) A tall-growing ash, native name *I-mo-don*; able to stand considerable drought and alkali; of value as a shade and timber tree in those sections of the United States where the summers are hot and dry and the winters not too cold. Some of the seeds should also be tested in a cold region like the upper Mississippi Valley." (*Meyer.*)

30415. HALIMODENDRON HALODENDRON (Pallas) Voss.

From near Kuk-rabat, Chinese Turkestan. "(No. 1553a, Nov. 4, 1910.) A very spiny, leguminous, Colutea-like shrub, occurring here and there in cliffs and on alkaline soil; also sparingly utilized as a hedge plant; to be experimented with as a hedge plant in the dry, hot parts of the United States." (*Meyer.*)

30416 to 30419. COLOCASIA sp.**Dasheen.**

From Mayaguez, Porto Rico. Presented by Mr. C. F. Kinman, horticulturist, Agricultural Experiment Station. Received March 30, 1911.

Tubers of the following; quoted notes by Mr. R. A. Young:

30416. "A nonacrid dasheen having pink sprouts. The tubers are variable in size, some weighing as much as 10 ounces. They are very white when cooked, but have little flavor."

30417. "The qualities of this variety are similar to the preceding, but there were no large tubers in this lot."

30418. "A nonacrid variety of dasheen, similar to the more common Japanese sorts, having white sprouts, and being of rather inferior quality when cooked. The size of the tubers received varied, but none weighed over 6 ounces."

30416 to 30419—Continued.

30419. "This variety has slightly acrid tubers somewhat like the *Yegu-imo* (No. 21646), but otherwise is similar to the preceding."

NOTE.—The Porto Rico Agricultural Experiment Station was unable to give definite data regarding the origin of the *Colocasia* varieties mentioned, as the labels in their collection had become more or less mixed. (*Young.*)

30420. HORDEUM VULGARE L.**Bearded barley.**

From St. Petersburg, Russia. Presented by Mr. Robert Regel, Bureau of Applied Botany. Received March 11, 1911.

Black.

30421 to 30429.

From Canton, China. Presented by Mr. G. Weidman Groff, Canton Christian College. Received March 29 and 30, 1911.

Notes and native names on this material furnished by Mr. Groff.

30421. SAGITTARIA SAGITTIFOLIA L.

"*Chi koo.* In propagating the *Chi koo* the Chinese plant the bulb, which develops into a strong plant about 1 foot high. This they plant in the first or second month. In about three or four months the plant develops underground rootstocks, which are separated from the mother stalk and planted in rows about 2 feet apart. The preparation of the soil is much like that of rice, the plants standing in water. A sandy or loamy soil is desirable. The Chinese are very fond of the tubers, which they boil with beef or pork."

30422. XANTHOSOMA sp.**Yautia.**

"*Paan long heung woo.*" "The tubers received were small, twice as long as thick, and had purplish-red sprouts; flesh white inside but purplish next to skin; very slightly acrid; flavor good, more distinctive than in most yautias." (*R. A. Young.*)

30423. SAGITTARIA SAGITTIFOLIA L.

From Kweilin, Kwangsi. "*Ma tai.* This is grown in much the same way as the *Chi koo* (No. 30421). They are very good boiled with meat. The Chinese eat them raw, too. Kweilin, the capital of Kwangsi, is famous for a variety of *Ma tai*, and these come from that country."

30424. (Undetermined.)

"*Kot shue* variety *Fan kot.* These are planted much like sweet potatoes and are an excellent tuber. The Chinese are very fond of them as food. The tuber is often ground into flour from which a porridge is made. The tubers are also eaten with pork, etc."

30425 and 30426. ZIZANIA LATIFOLIA (Griseb.) Stapf.**Wild rice.**

30425. "*Kau sun* variety *Tseng mau* (green)."

30426. "*Kau sun* variety *Wong mau* (yellow)."

30427. CITRUS sp.**Orange.**

"*Lau-chaang.*"

30428. AMYGDALUS PERSICA L.**Peach.**

"*Ha mat to.*"

30429. CITRUS JAPONICA Thumb.**Kumquat.**

"*Kum* variety *Tim kum.*"

30430 to 30432. HORDEUM spp.**Barley.**

Grown on the experimental grounds at Verrières, Switzerland; presented by Vilmorin-Andrieux & Co., Paris, France; received March 4, 1911.

Seeds of the following:

30430. *HORDEUM VULGARE CORNUTUM* Schrader.

30431. *HORDEUM VULGARE HORSFORDIANUM* Wittmack.

Excelsior.

30432. *HORDEUM VULGARE TRIFURCATUM* (Schlecht.) Beaven.

30433 to 30436. MEDICAGO FALCATA L.**Siberian alfalfa.**

Procured from Mr. Rasul Galwan, Leh, Ladakh, Kashmir, British India; received February 27, 1911.

Seeds of the following; notes by Mr. Galwan:

30433. From Ladakh, good seed.

30434. From Ladakh, poor seed.

30435. From Yarkand, Chinese Turkestan, very good seed.

30436. From Kargil, British India, poor seed.

30437 to 30461.

From Togo, German West Africa; presented by Dr. Meyer, governor of Togo; received March 25, 1911.

Seeds of the following; quoted names by Dr. Meyer; descriptions of varieties by Mr. Carleton R. Ball. Nos. 30437 to 30455, 30458, and 30459 from the Sansane-Mangu district; Nos. 30456, 30457, 30460, and 30461 from the region of Kete-Kratschi.

30437 to 30457. *ANDROPOGON SORGHUM* (L.) Brot.

30437. "*Banambo.*" The two heads sent under this number are not alike, one having white seeds and light-brown hulls and the other white seeds and very dark-brown or entirely black hulls. The name corresponds with that of No. 25332, but the seed does not. Head about 10 inches long.

30438. "*White ayiroa.*" Head 15 inches long, slender, with black glumes and white seeds.

30439. "*Red ayiroa.*" Head about 15 inches long, with dark-brown glumes and brick-red seeds. Resembles No. 30453 in seed and glume characters.

30440. "*Dark Sayirunga* from Tamberma." Heads about 12 to 14 inches long, with dark-brown glumes and buff and reddish-buff seeds.

30441. "*White Sayirunga* from Tamberma." Heads about 12 inches long; seeds white; one of the heads has deep-brown to black glumes and the other brown or light-brown glumes.

30442. "*Tebate* from Tamberma." Apparently identical with No. 25337, which was received under the name *Pebate*.

30443. "*Ehijeto*, yellow from Tamberma." Identical with No. 25341.

30444. "*Langpatege.*" Apparently identical with No. 25336, except in having reddish-brown hulls.

30445. "*Sotemondi*, red and white." Two heads received, one identical with No. 25342, the other very similar, but having white seeds. Heads small, 4 to 5 inches long, 2 inches wide; compact.

30437 to 30461—Continued.

30446. "*Beninga*." Head short, 8 inches long; $3\frac{1}{2}$ inches wide; probably identical with No. 25340; the glumes, however, are brown instead of black.

30447. "*Somonga*." Identical in name and appearance with No. 25335, except in having paler hulls.

30448. "*Tebate, dark*." Almost identical in appearance with No. 25335.

30449. "*Kotunda, from Moba*." Long, slender heads, reddish-yellow seeds, and short, black glumes appressed at the tips, some resembling No. 25335.

30450. "*Dyeripin, from Moba*." Slender, loose head about 10 to 12 inches long; white seeds and black, involute, pointed glumes. Apparently identical with No. 25328.

30451. "*Aparku safoe, white*." Name and appearance identical with No. 25328.

30452. "*Aparku ganz, red*." Head typical; seeds pale salmon; glumes black, involute. Seeds much paler in color than No. 25329, received under this name.

30453. "*Tyentyenyork*." Identical with No. 25333, received under the same name.

30454. "*Yoch (Yopieng)*." Nearly identical with No. 25334, received under a very similar name, differing in having smaller seeds and darker glumes.

30455. "*Nyumbayone (from Bimbe)*." Received under the same name as No. 25339, which it resembles in having two seeds in each spikelet and in the short, obtuse, black glumes. It differs, however, in having smaller, less flattened seeds, which are pale lemon instead of white.

30456. Practically identical with No. 30453.

30457. A mixture of dirty white with a smaller quantity of paler red seeds, both belonging to variety *elegans*.

30458 to 30461. *Pennisetum americanum* (L.) Schum. Pearl millet.

30458. "*Nyepe, dark*." **30460.** (No name.)

30459. "*Nyepe, white*." **30461.** (No name.)

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29930. *PERDICUM NIVEUM* (DC.) Skeels.

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Mr. Harlan

U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 242.

B. T. GALLOWAY, *Chief of Bureau.*

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM APRIL 1
TO JUNE 30, 1911:

INVENTORY No. 27; Nos. 30462 to 31370.

ISSUED MAY 31, 1912.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.

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BUREAU OF PLANT INDUSTRY.

Chief of Bureau, BEVERLY T. GALLOWAY.

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., January 20, 1912.

SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 242 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from April 1 to June 30, 1911: Inventory No. 27; Nos. 30462 to 31370."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

B. T. GALLOWAY,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.

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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM APRIL 1 TO JUNE 30, 1911: INVENTORY NO. 27; NOS. 30462 TO 31370.

INTRODUCTORY STATEMENT.

It is not generally realized by the public that the area of inhabited country on the globe which is visited by zero temperatures is limited to the Northern Hemisphere and to the tops of mountains. A temperature such as is prevalent on our Great Plains every winter would practically wipe off the vegetation from the continents lying below the equator and would so injure the agriculture even of central Europe that it would require many years in which to recover. The eucalypts are trees which we can not grow north of Florida or California, and yet there are varieties which grow well on the west coast of Scotland.

The limited area which can be explored with any hope of obtaining perennial plants hardy enough to thrive on our Great Plains should give any exploration of such areas special importance.

The present inventory contains descriptions of plant material obtained by Mr. Frank N. Meyer during an exploration trip across the great Tien Shan mountain range, which lies between Chinese and Russian territory, a region with passes 13,000 feet above the sea and possessing a climate approaching that of the upper Mississippi Valley. The winters are long and cold, and the thermometer goes down to -20° F. or more, while the summers are extremely hot, though possibly not so long as those in our Middle West.

Mr. Meyer left Kashgar in Chinese Turkestan on February 10, and on foot or by native cart he traveled across the alkali and sandy deserts for 13 days to Aksu, at the foot of the Tien Shan Range, picking up some desert poplars on the way. Here he changed his desert caravan for a mountain-climbing equipment and with a mounted guard climbed northward over the range by way of Awat, Yengi-Malah, Kailik, and Tanga-Tash over the Muzart Glacier to Ghilan, thence eastward along the Tekes River to a point on the Chong Djighilan River east of the hamlet of Chong Djighilan, and from there worked his way northwestward in the valley of the Ili to Kulja, spending 40 days on the road. The difficulties of travel in any poorly

mapped region are great, but they were made even greater by the fact that the region mentioned is the very boundary line between the Russian and the Chinese Empires and that at that time the Kulja, or Ili, district was a subject of international dispute between the two countries.

In the journey through the alkali desert Mr. Meyer secured some promising desert poplars and cuttings of that important drought and alkali resistant tree, the tamarisk (Nos. 30930 to 30933), to which enough attention has not yet been paid by dwellers in desert regions who are looking for cover plants and sand binders. Crossing the Tien Shan Range he reached altitudes of 13,000 feet and traveled through forests of the rare spruce *Picea obovata schrenkiana*, a form which may have a distinct future as a park and avenue tree in the elevated semiarid regions of this country where the Norway spruce fails. On March 16 and 17 Mr. Meyer discovered wild apricot and wild apple trees (Nos. 30946 to 30949 and 30952) standing in 2 feet of hard-frozen snow on the north side of an otherwise barren mountain near Tugai. In the valley of the Chong Djighilan River groves of these wild fruits occur, the slow-growing trees varying in all possible ways. They grow in the company of birches, sea buckthorn, hawthorn, and other northern species, and Mr. Meyer is forced to the conclusion from his study of the wild orchards which he saw there that these wild species will give rise to strains of very much hardier varieties of both these orchard fruits than any we now possess. Our apples and apricots have no doubt come to us from their wild homes through the mild regions of Europe, and this reaching back to the original wild hardy forms can not fail to be of importance to the breeders who are interested in the production of hardier varieties. Owing to the fact that it took two months for the cuttings to reach Washington (though gathered in March they did not reach here until May 17), it proved impossible to save them. Arrangements for their reintroduction are under way.

Some of the other plants which were secured on this trip are an ornamental *Euonymus* (No. 31276) from the Ili Valley, which is likely to be hardier than *E. radicans*, so much used on the walls of our houses; a valuable collection of the named varieties of winter melons of the Casaba type (Nos. 31335 to 31352) from the sand dunes of Tcharjui; two yellow-flowered alfalfas from an altitude of 4,000 to 7,000 feet (Nos. 30954 and 30955); two wild currants from Idin-Kul (Nos. 30943 and 30944); a collection of hardy willows for park planting in the Northwest (Nos. 30923 to 30929); and a collection of five varieties of apricots, one of them a dark-red sort, from Bis-Karim (Nos. 30628 to 30632).

Mr. C. V. Piper, of the Office of Forage-Crop Investigations, temporarily detailed to the Bureau of Insular Affairs of the War Depart-

ment for the purpose of making a study of the forage-crop problems of the Philippine Islands, left that detail on July 5 and started on an agricultural exploration for this office. His collections which are recorded here are only such as were made by him previous to leaving the Philippines. They include, among other forage grasses and grains, soft-seeded varieties of the grass known as Job's-tears (*Coix lachryma-jobi ma-yuen*), which Mr. Piper believes are promising as summer grain crops (No. 30715).

Of the plant material sent in by correspondents and through the American consuls the following are worthy of special attention: A strong, fruitful variety of the chayote (No. 30462), other varieties of which vine have been disappointing in our experiments because of their shy-bearing habits; roots of the white ginger from China (Nos. 30483 and 30592) that may demonstrate the possibility of ginger culture in this country; a wild species of *Persea* (No. 30494) from Panama which the avocado growers of Florida and California may be glad to try as a stock; the arayan from Mazatlan, Mexico (No. 30499), a rich, juicy, tropical fruit that deserves to be improved, as it represents one of a large number of tropical myrtles which have good edible fruits; plants of the Laranja da Terra (No. 30605), a variety or local strain of orange, which is used as a stock for the navel orange in Bahia, Brazil, where this orange is supposed to have originated; a collection of the remarkable soy beans of Manchuria (Nos. 30593 to 30601), the value of which for producing a paint oil and for use in the manufacture of human food has been recently so strongly emphasized; the sweet lime of Palestine (No. 30620) which, according to Mr. Aaron Aaronsohn, is preferred as a stock for the famous seedless Jaffa orange, because the trees require less irrigation and fruit earlier than the bitter orange; the Shibu kaki of Japan (No. 30678), a variety of persimmon which is not edible, but from which the remarkable waterproofing called "Kaki-no-shibu," a fermented product, is made; a new pine (No. 30688), which grows to a height of 200 feet and has cones 12 inches long, discovered by Mr. George Forrest in the Lichiang mountain range of western Yunnan; a lemon variety (No. 30737) from an altitude of 4,000 feet in the Himalayas, which is not injured by the snowfalls and rather severe frosts of that region; a shrubby fruit plant of the annona family (No. 30835) from British West Africa that is burned to the ground each year and may adapt itself to the annual freezes of Texas and northern Florida; *Sorbus torminalis* (No. 30892) from southern Russia, which is suggested by Mr. Theo. Kryshstofovich as a stock for the pear on account of its remarkable drought resistance; seeds from good fiber-bearing varieties of the New Zealand flax (Nos. 30831 and 30832) from Auckland; two species of passifloras from the Caucasus (Nos. 30902

and 30903) and one from Uruguay (No. 31207) for the use of any breeder who will undertake the hybridization of the maypop; the remarkable akala berry from Hawaii (*Rubus macraei*, No. 30907), with fruits 2 inches in diameter, of a deep-red color, and with an agreeable, slightly bitter taste, also imported for breeding purposes; bud sticks of seven of the standard commercial varieties of the Spanish carob (Nos. 30914 to 30920), a fodder tree of decided importance for the cheap lands of California; a remarkable collection of 29 varieties of Medicago (Nos. 30992 to 31024) and 14 of clover (Nos. 31043 to 31057) from St. Petersburg; 77 varieties of rice from the Philippines (Nos. 31116 to 31192); a tropical leguminous plant, *Sphenostylis* (No. 31194), which forms edible tubers with a taste similar to that of the potato; the Palma de Chile (*Jubaea chilensis*, No. 31097), a drought-resistant palm which is rapidly being exterminated by the manufacturers of Miel de Palma, a much-sought-for sirup which is made from its sap; and two unusual forms of the potato (Nos. 31230 and 31231) from 10,000 feet altitude in the interior of Peru, where they are cultivated by the Hill Indians of the Perene.

As heretofore, the inventory has been compiled by Miss Mary A. Austin and the botanical identifications and the notes on geographic distribution have been prepared by Mr. H. C. Skeels under the general direction of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations. With regard to these geographic notes it should be pointed out that they give only the distribution of the species as recorded in the available literature and no pretense is made to an exhaustive investigation of the distribution of any of the species.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., December 20, 1911.

INVENTORY.

30462. CHAYOTA EDULIS Jacq. Chayote.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received April 1, 1911.

"*Chayotte verte grosse* (large green chayote). This variety is very strong and very fruitful." (Trabut.)

These are specimens of the strain annually exported from Algiers in very large quantities to the larger cities of Europe.

30463. PRUNUS ARMENIACA L. Apricot.

From Tai Ming Fu, North China. Presented by Mr. Horace W. Houlding. Received at the Plant Introduction Garden, Chico, Cal., March 27, 1911. Numbered April 1, 1911.

"This apricot is called the *Mammoth*." (Houlding.)

30464 to 30466. SACCHARUM OFFICINARUM L. Sugar cane.

From Tainan, Formosa, Japan. Presented by Mr. Takiya Kawakami, Bureau of Productive Industry, Government of Formosa, Taihoku, Formosa, Japan. Received April 1, 1911.

Plants of the following:

30464. *Chiku-cha.*

30466. *Ra-cha.*

30465. *An-cha.*

See No. 28193 for purpose for which introduced.

30467 and 30468. VITIS VINIFERA L. Grape.

From Tiflis, Trans-Caucasia, Russia. Presented by Mr. A. Rolloff, director, Tiflis Botanical Garden. Received April 1, 1911.

Cuttings of the following:

30467. *Tavris.*

30468. *Ksil-isjum.*

"The fruits of these table varieties bear transportation very well." (Rolloff.)

30469 to 30472. CUCUMIS MELO L. Muskmelon.

From Diarbekr, Kurdistan, Asiatic Turkey. Presented by Mr. W. W. Master-son, American consul, Kharpuz, Asiatic Turkey. Received April 1, 1911.

Seeds of the following winter varieties; notes by Mr. Masterson:

30469. "Elongated; coarse network; greenish white interior."

30470. "Large size; ball shaped; fine network; greenish white interior."

30471. "Ball shaped, but sectioned; yellow exterior; white interior."

30472. "Ball shaped; fine network; greenish white interior; medium size."

30473. PHOENIX DACTYLIFERA L. Date.

From Fez, Morocco. Presented by Mr. J. Thomson, Hotel Reina Cristina, Alge-ciras, Spain. Received April 4, 1911.

Taflelt. See No. 18630 for description.

Seeds.

30474. NICOTIANA TABACUM L.**Tobacco.**

From Orizaba, Vera Cruz, Mexico. Presented by Mr. George Young, secretary, The Cananea Consolidated Copper Co., Cananea, Sonora, Mexico, who procured it from Gustavo Mayer y Cia., of Orizaba. Received April 3, 1911.

San Cristobal. "This seed is from one of the best plantations of the Valle Nacional and produces about the highest grade of Mexican tobacco. It was gathered from plants specially cultivated for seed. The nursery was made in the latter part of August and the plants were transplanted on the 1st of October. They suffered from no disease or insects. The original seed came from Havana about 20 years ago, but this is the first time that seed has been gathered from special plants." (*Gustavo Mayer y Cia.*)

30475 to 30477.

From Piracicaba, Brazil. Presented by Prof. Clinton D. Smith, Escola Agricola Pratica Luiz de Queiro. Received April 5, 1911.

Seeds of the following; quoted notes by Prof. Smith:

30475. CAESALPINIA PECTINATA Cav.

"Tara-tara."

Distribution.—In the vicinity of Popayan, Colombia, and in Peru and Brazil.

30476 and 30477. PSIDIUM GUAJAVA L.

Guava.

30476. "From selected fruits of white-fleshed guavas."

30477. "Seed from red-fleshed guavas."

30480. SPONDIAS LUTEA L.**Hog plum.**

From Rio de Janeiro, Brazil. Presented by Mr. Antonio Augusto Pereira da Fonseca. Received April 5, 1911.

"*Caja mirim.* Fruit edible." (*Fonseca.*)

Distribution.—From the provinces of Yucatan and Tabasco in southern Mexico southeastward through Central America to Colombia and northern South America and in the West Indies.

30481. TRIFOLIUM SUAVEOLENS Willd.**Shaftal.**

From Tiflis, Caucasus, Russia. Presented by Dr. Richard Schmidt, assistant director, Caucasus Museum and Public Library. Received March 30, 1911.

"This plant grows on comparatively xerophilous places, which receive water almost only in the spring from rainfalls and floods. It is very fragrant, so that one can notice the blooming clover meadows a kilometer away by the sweet odor. The soil on which it grows is a light, warm, penetrable, yellow loam, a sort of loess. It contains lime, clay, and silicic acid." (*Schmidt.*)

30482. AMYGDALUS sp.**Chinese flat peach.**

From about 50 miles southwest of Tsinan, Shantung, China. Presented by Mr. T. B. Neal, Union Medical College, Tsinan. Received April 8, 1911.

Feicheng. "This is a large, luscious cling, very much esteemed by the Chinese. I had to depend upon the word of the man I sent down into the country to buy these cuttings to guarantee their genuineness, so I send them with all reserve." (*Neal.*)

See Nos. 21989 and 29991 for previous introductions.

30483. ZINZIBER OFFICINALE Rosc.**White ginger.**

From Weihhsien, China. Presented by Mr. A. H. Mateer. Received April 8, 1911.

"This is planted in ground that has been spaded to the depth of nearly a foot, but which is firm and solid underneath. This is to keep it from sending out rootlets deep

30483—Continued.

down and lead the strength of the plant to producing tubers, like the effect on a pot-bound plant of making it do something besides make rootlets. The ground should not be too dry, and this kind of soil will be all right without watering, except at first. In our region (latitude of Kentucky) it is planted in trenches dug as described, in April, in black and sandy soil (that is what the man said, though it seems to me like a contradiction), and the ground is not enriched. It is dug in the autumn. The price now (March 4) is about 5 cents a pound, but two months ago it was less than 3 cents, and in a month or two it will be twice as much." (*Mateer.*)

30486. ANNONA sp.**Annona.**

From Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received April 7, 1911.

"About three years ago Dr. J. Huber brought the original seed of this from the River Purus; a year ago I planted several of the young trees on the station grounds and the seeds are from fruits from these trees.

"The fruit is almost spherical and only slightly heart shaped; it is smooth and of a greenish orange color; weight about 6 ounces; meat of a beautiful orange and in fair quantity; taste, like that of all the annonas, difficult to describe, but with a suggestion of rosin, and not unlike some apples I have eaten; probably capable of improvement, and fruits may become larger on older trees. The tree in general aspect as well as in its bark and foliage strongly resembles the persimmon." (*Fischer.*)

30487. PASSIFLORA LIGULARIS Juss.**Passion fruit.**

From Orizaba, Vera Cruz, Mexico. Presented by Mr. William W. Canada, American consul, Vera Cruz. Received April 10, 1911.

30488. ZIZIPHUS JUJUBA Miller.**Jujube.**

From Chingchowfu, via Kiaochow, China. Presented by Mr. W. M. Hayes, Gotch-Robinson Union Theological College. Received April 10, 1911.

"Cuttings of the largest variety of Chinese dates that I could hear of. The Chinese claim that they are not easy to graft successfully, so they will have to be given the best possible chance." (*Hayes.*)

30491. SPONDIAS PINNATA (L.) Kurz.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received April 11, 1911.

Distribution.—A small tree occurring both wild and cultivated throughout India from the Indus eastward and southward to Malakka and Ceylon, rising to an elevation of 5,000 feet in the Himalayas; cultivated throughout tropical Asia.

30492 to 30494.

From Panama. Collected by Mr. H. Pittier, Bureau of Plant Industry. Received April 13, 1911.

30492. RHEEDIA EDULIS (Seem.) Planch. and Triana.**Sastra.**

See No. 27485 for description.

Seeds.

30493. ARRACACIA XANTHORRHIZA Bancr. ●**Arracacha.**

From Chiriqui.

Tubers.

30494. PERSEA sp.**Avocado.**

"A wild species of avocado which may be a good stock for grafting the finer varieties." (*Pittier.*)

Seeds.

30495. SPONDIAS CYTHEREA Sonnerat.**We fruit.**

This plant has generally been known under the name *Spondias dulcis* Forster, which was published in 1786 (*De Plantis Esculentis*, p. 33). Mr. P. J. Wester has called attention to the publication in 1782 of *Spondias cytherea* Sonnerat (*Voyage aux Indes Orientales et la Chine*, vol. 2, p. 222, pl. 123), and as this is undoubtedly the same species as the one described by Forster, the earlier name should be used.

From Brisbane, Queensland, Australia. Presented by Mr. J. F. Bailey, director, Department of Agriculture and Stock. Received April 11, 1911.

See No. 26470 for description.

30496. MAIHUENIA POEPPIGII (Otto) Philippi.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile. Received April 13, 1911.

"*Opuntia maihuen* (Herba del Gunaco). A valuable plant for industry and ornament. Grows in dry, worthless, sandy waste, where nothing else will grow. The skinned plant and fruit are eaten as a refreshment. The plant contains an extra large quantity of gum, which I believe to be of industrial use and value. It completely covers the loose sand for about a meter in diameter. Collected from the drifting sands near the Volcano Antuco." (*Husbands*.)

30497. DIOSPYROS TESSELLARIA Poir.

From Port Louis, Mauritius. Presented by Mr. Gabriel Regnard. Received April 10, 1911.

See No. 30139 for previous introduction.

30498. WARNERIA AUGUSTA Stickman.**Cape jasmine.**

(Herbarium Amboinense, in Linnæus's *Amoenitates Academicæ*, vol. 4, 1759, pp. 136, 138.)

The Cape jasmine has heretofore been listed in the Inventories as *Gardenia jasmynoides* Ellis (*Philosophical Transactions*, vol. 51, 1761, p. 935, pl. 23). The following quotation from Ellis's article throws considerable light on this name:

"In July, 1758, I procured a specimen from Mr. Warner, for my friend, Dr. Linnæus's opinion. At the same time I wrote to the professor [Linnæus] that if he found it to be a new genus, agreeable to the description I had sent him, that he would please to call it *Warneria* after its worthy possessor [Richard Warner, of Woodford, in the county of Essex, England, the author of *Plantæ Woodfordienses*, 1771]. * * * But Mr. Warner, refusing to have it so called and choosing that it should still remain a jasmine, as it is commonly called, I have thought of no man more worthy as a botanist than our friend Dr. Garden; accordingly, the professor has agreed to adopt this new genus by the name of *Gardenia*."

However, the generic name *Warneria*, suggested by Ellis, was actually published by Stickman two years before the publication of *Gardenia*. It was based on the plant described and figured by Burmann (*Rumph's Herbarium Amboinense*, vol. 7, 1755, p. 26, pl. 14) with the specific name *augusta* (spelled *Varneria augusta* on p. 136, and *Warneria angusta* on p. 138). This description and plate are generally accepted as applying to the Cape jasmine, and were cited by Linnæus in the first place in which he described the plant, under the name *Gardenia florida* (*Species Plantarum*, ed. 2, 1762, p. 305). Under present rules of botanical nomenclature this use of the binomial *Warneria augusta* and the citation of a previously published description

30498—Continued.

constitutes botanical publication, and it is therefore necessary to use this name for the Cape jasmine.

From Kuling, China. Presented by Mrs. John Berkin. Received March 1, 1911.

"Seeds of the favorite spring flower of the Chinese. In drying, the seeds stain the paper a bright yellow, which is indelible, as I found on my fingers. The Chinese use it in producing their yellow dyes. The bush is graceful and evergreen; the leaves are oblong; the flowers resemble a double white camellia, but with most exquisite perfume. It is a profuse bloomer, the flowers maturing before the leaf buds, being one of the earliest spring flowers.

"The seed pods are very much like those of the rose, but a bright orange yellow in color, and are quite ornamental on the bush among the leaves. Chinese name is Romanized *Chi-tse* flower." (*Berkin.*)

30499. MYRTUS ARAYAN H. B. K.**Arayan, or arrellano.**

From Mazatlan, Mexico. Collected by Mr. J. M. Goulding. Presented by Mr. F. W. Popenoe, Altadena, Cal. Received April 10, 1911.

"This tree grows to be 20 to 35 feet high, the trunk sometimes 15 inches in diameter, with smooth gray bark and erect branches. It seems to be cultivated somewhat extensively in Mexico. Fruit is greenish yellow, with a large irregular disk at the top and a smooth nutlet in the center; very juicy and said to have a rich, spicy, sub-acid flavor. One of the popular soft drinks of the country, said to be very refreshing, is made from it." (*Rose, J. N. Notes on Useful Plants of Mexico. Contributions from U. S. National Herbarium, vol. 5, no. 4.*)

Distribution.—From Panama southward to Peru.

30500 to 30503.

From central Asia. Presented by Dr. Isaac Bayley Balfour, director, Royal Botanic Garden, Edinburgh, Scotland. Received April 14, 1911.

Seeds of the following:

30500. HORDEUM VULGARE L.

Hull-less barley.

Variety.

30501 and 30502. APOCYNUM HENDERSONI Hook.

"This yields the fiber from which the people largely make rope." (*Balfour.*)

One or two of the central Asian species of this genus give fiber especially suited for use in paper making, and this may also prove of value for this purpose.

30501. Brown fiber.

30502. White fiber.

30503. CANNABIS SATIVA L.

Hemp.

Female.

30504. MEDICAGO SATIVA L.**Alfalfa.**

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burt Davy, agrostologist and botanist, Transvaal Department of Agriculture. Received April 17, 1911.

"Chinese lucern. This variety is described as growing equally well on hillsides and in valleys, even at high altitudes, where it is said to attain a height of 4 or 5 feet. It is also said to thrive in very salty, marshy land. I am unable to vouch for the correctness of these statements, but the plant seems to be worth trial." (*Davy.*)

30505 and 30506. HORDEUM spp.**Barley.**

From Pretoria, Transvaal, South Africa. Presented by Prof. J. Burtt Davy, agrostologist and botanist, Transvaal Department of Agriculture. Received April 17, 1911.

Seeds of the following:

30505. HORDEUM sp.

Nepaul.

30506. HORDEUM VULGARE TRIFURCATUM (Schlecht.) Beaven.

30508. LARIX LEPTOLEPIS (Sieb. and Zucc.) Gord.**Japanese larch.**

From Copenhagen, Denmark. Presented by Mr. S. T. Dana, Acting Chief of Silvics, Forest Service, U. S. Department of Agriculture, who procured it from Mr. Johannes Rafn. Received April 17, 1911.

See No. 6672 for previous introduction.

Distribution.—Slopes of the mountains in northern and central Japan extending from Hokushu southward to the region around Yokohama.

30509. MAGNOLIA CAMPBELLII Hook. f. and Thoms.**Magnolia.**

From Sibpur, Calcutta, India. Purchased from Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received April 17, 1911.

See No. 28660 for previous introduction.

Plants.

30510. MUSA BASJOO Sieb. and Zucc.**Plantain.**

From Chiddingfold, Surrey, England. Purchased from V. N. Gauntlett & Co. (Ltd.). Received April 17, 1911.

"This is not hardy at Kew, but in the southwest of England (Cornwall) it can be grown in the open air, though even there it runs risks." (*Dr. David Prain, director, Royal Botanic Gardens, Kew, England.*)

Distribution.—In the Nansei Archipelago and also cultivated in the southern part of Japan.

30511. LYCORIS AUREA (L'Herit.) Herbert.

From Yachowfu, Szechwan, China. Presented by Mr. C. A. Salquist at the request of Mr. H. J. Openshaw. Received April 22, 1911.

"Bulbs of a yellow lily. I have not seen this particular kind of a lily in America, but it may be quite common." (*Salquist.*)

Distribution.—A bulbous plant found in the provinces of Kiangsu and Hupeh in China, and cultivated in Japan.

30512. SAPIUM VERUM Hemsl.**White rubber.**

Caucho blanco.

From the plantation "La Tigra," Cuesta de Tocota, on the road from Cali to Buenaventura, Colombia. Procured by Mr. Henry J. Eder, former American consular agent at Cali, Colombia; forwarded through Mr. Charles H. Small, American vice and deputy consul general, Bogota, Colombia. Received April 19, 1911.

See No. 24640 for description.

Seeds.

30513. NICOTIANA TABACUM L.**Tobacco.**

From Manicaragua, Santa Clara, Cuba. Presented by Mr. Francisco A. Montero, Santa Clara, Santa Clara Province, Cuba. Received April 18, 1911.

"Considered by experts of this country as the best variety of tobacco in the island of Cuba." (*Montero.*)

30514. CASTILLA PANAMENSIS Cook. Central American rubber.

From Panama. Collected by Mr. H. Pittier, Bureau of Plant Industry. Received April 20, 1911.

One of the six rubber-producing trees of this genus native to Panama, where it was collected by the Smithsonian Institution Biological Survey of the Canal Zone.

Seeds.

30515. PASSIFLORA EDULIS Sims.**Passion fruit.**

From Raratonga, Cook Islands. Presented by Mr. North Winship, American consul, Tahiti, Society Islands. Received April 20, 1911.

"These fruits are not grown in Tahiti, but are imported as a table fruit." (*Winship.*)

30516 to 30521.

From Buitenzorg, Java. Presented by the Director of Agriculture. Received April 21, 1911.

Seeds of the following:

30516 and 30517. TALAUMA MUTABILIS Blume.

30516. See No. 28794 for previous introduction.

30517. Variety *longifolia*.

30518 to 30521. DIOSPYROS spp.

These species were introduced for the work of testing all the procurable species of this genus as stocks for the better varieties and for breeding purposes.

30518. DIOSPYROS DISCOLOR Willd.

30519. DIOSPYROS sp.

30520. DIOSPYROS CAULIFLORA Blume.

Distribution.—At an elevation of 500 feet on the calcareous mountains in the province of Bantam, Java.

30521. DIOSPYROS MACROPHYLLA Blume.

Distribution.—On the slopes of the mountains in the island of Java.

30522 to 30584.

From Tiflis, Caucasus, Russia. Presented by Mr. A. Roloff, director, Botanic Garden. Received April 18, 1911.

Seeds of the following:

30522. PAEONIA CORALLINA Retz.

Peony.

Distribution.—Central and southern Europe, and eastward to Armenia and northern Persia.

30523. PAEONIA MLOKOSSEWITSCHI Lomakin.

Peony.

See No. 27674 for previous introduction.

30524. CASTALIA ALBA (L.) Greene.

Water lily.

Distribution.—Lakes and slow streams throughout Europe, and in northern and central Asia.

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30522 to 30584—Continued.**30525. PAPAVER ORIENTALE L.****Poppy.**

Distribution.—Throughout the Caucasus region and northern Persia; generally cultivated.

30526. CRAMBE ORIENTALIS L.

Distribution.—Asia Minor, Kurdistan, and eastward through northern Syria to Persia.

30527. TAMARIX HOHENACKERI Bunge.**Tamarisk.**

Distribution.—Saline regions in the vicinity of Tiflis in the Caucasus region.

30528. TILIA FLAVA Wolny.**Linden.**

Distribution.—On the slopes of the Balkan Mountains in Bulgaria and Bosnia, and in Asia Minor.

30529. ERODIUM CICONIUM (Juslen.) Willd.

Distribution.—The countries bordering on the Mediterranean from Spain and Italy eastward to Syria.

30530. ERODIUM OXYRHINCHUM Bieb.

Distribution.—Sandy hillsides in the Caucasus region and eastward through northern Persia to Turkestan.

30531. ACER TRAUTVETTERI Medw.**Maple.**

Distribution.—The Caucasus region of southeastern Russia and northern Persia.

30532. ACER INSIGNE Boiss. and Buhse.**Maple.**

Distribution.—On the slopes of the mountains in the provinces of northern Persia bordering on the Caspian Sea.

30533. ACER LAETUM Meyer.**Maple.**

Distribution.—In woods in Armenia and the northern part of Persia.

30534. STAPHYLEA PINNATA L.**Bladder nut.**

Distribution.—Southern Europe and western Asia extending from Germany and Italy eastward to the Caucasus region and to Syria.

30535. EUONYMUS EUROPAEUS L.**Spindle tree.**

See No. 2660 for previous introduction.

Distribution.—Throughout Europe and eastward to the region of the Ural Mountains in Siberia.

30536. RHAMNUS CATHARTICUS L.**Purging buckthorn.**

See No. 30246 for previous introduction.

30537. RHAMNUS FRANGULA L.**Alder buckthorn.**

See No. 30248 for previous introduction.

30538. RHAMNUS IMERETINUS Booth.**Buckthorn.**

Distribution.—The province of Kars in the Trans-Caucasian region of south-eastern Russia.

30539. TRIFOLIUM ARVENSE L.**Rabbit-foot clover.**

See No. 9751 for previous introduction.

30540. TRIFOLIUM SPUMOSUM L.**Clover.**

See No. 30102 for previous introduction.

30541. TRIFOLIUM TUMENS Stevens.**Clover.**

Distribution.—In low fields and on mountain slopes in the Caucasus region.

30522 to 30584—Continued.

30542. TRIFOLIUM AMBIGUUM Bieb.

Clover.

Distribution.—High fields and lower alpine slopes of the mountains in the Caucasus region, and in Armenia.

30543 and 30544. TRIFOLIUM FILIFORME L.

Suckling clover.

See No. 20662 for previous introduction.

30545. MELILOTUS NEAPOLITANA Tenore.

Distribution.—The countries bordering on the Mediterranean from Spain and southern France through Italy, the Balkan Peninsula, and Asia Minor to Persia, and in northern Africa.

30546. CARAGANA GRANDIFLORA DC.

Siberian pea tree.

Distribution.—On dry hillsides in the Trans-Caucasian region of Russia, and in Armenia, and the region around the Caspian Sea.

30547. ASTRAGALUS CRUCIATUS Link.

Distribution.—In dry and rocky fields in Asia Minor and Syria.

30548. ASTRAGALUS HAMOSUS L.

See No. 30108 for previous introduction.

30549. ASTRAGALUS VICIAEFOLIUS DC.

Distribution.—The Caucasus region of Russia and in Asia Minor.

30550. ASTRAGALUS DENSIFOLIUS Lam.

Distribution.—On the subalpine slopes of the mountains in Armenia.

30551. ASTRAGALUS MOLLIS Bieb.

Distribution.—Arid places in the Caucasus region and in Armenia and western Persia.

30552. ASTRAGALUS GALEGIFORMIS L.

See No. 4140 for previous introduction.

Distribution.—Slopes of the mountains in the Trans-Caucasian region and in Armenia.

30553. ASTRAGALUS SCHAHKUDENSIS Bunge.

Distribution.—The provinces of northern and central Persia; especially frequent in the vicinity of Teheran.

30554. ASTRAGALUS FALCATUS Lam.

See Nos. 20708 and 20727 for previous introductions.

Distribution.—The Caucasus region of southern Russia, the region of the Ural Mountains of Siberia, and in Armenia.

30555. ASTRAGALUS CEPHALOTES Pallas.

Distribution.—The Trans-Caucasian region of Russia and in northern Persia.

30556. ASTRAGALUS SANGUINOLENTUS Bieb.

Distribution.—Rocky slopes of the eastern Caucasus Mountains in northern Persia.

30557. ASTRAGALUS BRACHYCARPUS Bieb.

Distribution.—On the slopes of the mountains in the Trans-Caucasian region of southeastern Russia and northern Armenia.

30558. VICIA TENUIFOLIA Roth.

See No. 24465 for previous introduction.

30559. VICIA ERVILIA (L.) Willd.

Bitter vetch.

30522 to 30584—Continued.

30560. *VICIA HIRSUTA* (L.) S. F. Gray.

See Nos. 9237 and 16460 for previous introductions.

Distribution.—Europe and southern Asia, extending from France and Germany eastward to Persia and northern India, and in Abyssinia.

30561. *LATHYRUS CICERA* L.

Distribution.—Waste places along cultivated fields in central and southern Europe, western Asia, and northern Africa.

30562. *GLEDITSIA CASPICA* Desf.

See Nos. 27335, 27516, and 27517 for previous introductions.

30563. *PRUNUS MICROCARPA* Meyer.

Cherry.

See Nos. 27303, 27337, and 28946 for previous introductions.

30564. *PRUNUS PROSTRATA* Labill.

Bush cherry.

See No. 28945 for previous introduction.

30565. *LAUROCERASUS OFFICINALIS* Roem.

Cherry laurel.

30566. *PYRUS NIVALIS ELAEAGRIFOLIA* (Pall.) Schneider.

Wild pear.

See Nos. 27134 and 27670 for previous introductions.

30567. *CRATAEGUS MONOGYNA* Jacq.

Hawthorn.

Distribution.—Throughout Europe and northern Africa and eastward to northern India.

30568. *ROSA GALLICA* L.

Rose.

See No. 28237 for previous introduction.

30569. *SPIRAEA HYPERICIFOLIA* L.

Distribution.—From the Caucasus region and Persia eastward to Mongolia and the region of Lake Baikal.

30570. *CORNUS AUSTRALIS* Meyer.

Distribution.—The provinces of eastern Turkey, southern Russia, Asia Minor, and northern Persia bordering on the Black and Caspian seas.

30571. *LONICERA IBERICA* Bieb.

Distribution.—On rocky mountain slopes of the Caucasus region of south-eastern Russia and in northern Persia.

30572. *LALLEMANTIA IBERICA* (Bieb.) Fisch. and Meyer.

See No. 29932 for previous introduction.

30573. *DAPHNE CAUCASICA* Pallas.

Distribution.—In fields along streams in the Caucasus region and in northern Persia.

30574. *ELAEAGNUS ANGUSTIFOLIA* L.

Oleaster.

30575. *CELTIS CAUCASICA* Willd.

Distribution.—On mountain slopes in Armenia and in northern Persia.

30576. *FAGUS ORIENTALIS* Lipsky.

Caucasian beech.

See No. 27662 for previous introduction.

30577. *POPULUS TREMULA* L.

Aspen.

See Nos. 29098 and 29357 for previous introductions.

30522 to 30584—Continued.

- 30578.** IRIS MUSULMANICA Fomin. (?) Iris.
30579. IRIS IBERICA Hoffm. Iris.

Distribution.—In the Caucasus region, and in Armenia, and northern Persia, reaching an elevation of 7,000 feet.

- 30580.** IRIS ACUTILOBA Meyer. Iris.

Distribution.—On dry hillsides in the province of Baku, in the Caucasus region of southeastern Russia and southward to Teheran, Persia.

- 30581.** IRIS ACUTILOBA Meyer. Iris.

Variety *bimaculata*.

- 30582.** IRIS PUMILA L. Iris.

Distribution.—Southern Europe, extending from Austria and Dalmatia eastward to the Caucasus region, and in Siberia.

- 30583.** IRIS FLAVESCENS Delile. Iris.

Distribution.—The Caucasus region of Russia and in Armenia.

- 30584.** IRIS PALLIDA Lam. Iris.

See No. 28457 for previous introduction.

30585 to 30591.

From the Royal Botanic Garden, Rome, Italy. Presented by Mr. Oglesby Paul, landscape gardener, Horticultural Hall, Fairmount Park, Philadelphia, Pa. Received April 11, 1911.

Seeds of the following:

- 30585.** ARAUJIA SERICIFERA Brot.

Distribution.—A climbing, shrubby vine with small racemes of purple flowers found in Peru and in southern Brazil.

- 30586.** CARICA QUERCIFOLIA (St. Hil.) Benth. and Hook.

See No. 3534 for description.

Distribution.—The southeastern part of Brazil, and in Paraguay, Uruguay, and Argentina.

- 30587.** EPHEDRA FRAGILIS Desf.

Distribution.—A shrub found in the countries at the western end of the Mediterranean, extending from southeastern Spain and Sicily to the Canary and Madeira Islands, Morocco, and Algeria.

- 30588.** EPHEDRA ALTISSIMA Desf.

Distribution.—A shrub found in fields in Morocco and Algeria.

- 30589.** MALLOTUS JAPONICUS (Thunb.) Muell. Arg.

Distribution.—A small tree occurring in the provinces of Hupeh, Szechwan, and Kwangtung in China, and in Formosa, the Nansei Archipelago, and in Japan.

- 30590.** PEUCEDANUM VERTICILLARE (L.) Mert. and Koch.

Distribution.—Southern Europe, extending from France and Spain eastward through Germany and Italy to Austria-Hungary.

- 30591.** PEUCEDANUM OREOSELINUM (L.) Moench.

Distribution.—Central and southern Europe, extending from Denmark, Germany, and Spain eastward to the Caucasus region of Russia.

30592. ZINZIBER OFFICINALE Rosc.**White ginger.**

From Tsinan, Shantung, North China. Presented by Mr. J. S. Whitewright, Tsinan Institute. Received April 21, 1911.

"These specimens are, I believe, of somewhat better quality than those formerly sent (No. 29355)." (*Whitewright*.)

30593 to 30601. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

From Manchuria. Procured through Mr. Edward C. Parker, Agricultural Experiment Station, Mukden, Manchuria. Received April 19, 1911.

Seeds of the following; quoted notes by Mr. Parker:

30593. "Yellow. Chinese name *Huang tou*. Sample collected at Ninguta, in Kirin Province, 45° north latitude. Ninguta is a Chinese town about 10 miles south of the Trans-Siberian Railway and halfway between Harbin and Vladivostok. The Ninguta beans are famous as seed beans, large quantities being distributed among the Chinese in Kirin Province for seed purposes. The date of maturity for this variety is the last week in September, the crop having occupied the land about 130 days. This variety is known to have been grown in the Ninguta district for 40 years, or since the time the country was opened for settlement. Chinese state that the variety is prized for its thin skin, heavy weight per bushel, and its high oil content."

30594. "Green. Chinese name *Ching tou*. Sample collected at Ninguta (see No. 30593). No information is available concerning time of maturity or special qualities of this variety. It has been grown at Ninguta for about 40 years."

30595. "Big, round, green. Chinese name *Tah ching yuan tou*. Sample collected at Antung, in southeast Shengking Province, 40° north latitude. Antung is west of the Yalu River, which divides Chosen (Korea) and Manchuria. No information is available concerning the time of maturity, special qualities, or length of time this variety has been grown in the Antung region. From my own observations, however, I will say that the green soy beans of the Antung region require more time to mature than the small, yellow soy beans of the north. Antung has been settled by Shantung Province people for about 75 years and the variety is doubtless somewhere near the same age. The first recorded exports of soy beans from Manchuria took place from a port in this region (Takushan) about the year 1830."

30596. "Small, round, green. Chinese name *Hsiao ching yuan tou*. Sample collected at Antung (see No. 30595)."

30597. "Big, iron corner, green. Chinese name *Tah tie chiao ching tou*. Sample collected at Antung (see No. 30595)."

30598. "Small, iron corner, green. Chinese name *Hsiao tie chiao ching tou*. Sample collected at Antung (see No. 30595)."

30599. "Compact, round. Chinese name *Chin yuan tou*. Sample collected near Ninguta. Probably the same variety as the 'yellow soy bean' (No. 30593). No description can be furnished other than that given under that number."

30600. "Compact, round. Chinese name *Chin yuan tou*. Sample collected at Shuangchengfu in Kirin Province, 45° north latitude. Shuangchengfu is a Chinese town about 40 miles south of Harbin on the southern division of the Russian railway. One of the most extensive and fertile soil areas in Manchuria is tributary to Shuangchengfu. This variety is undoubtedly the

30593 to 30601—Continued.**30600—Continued.**

same common stock as Nos. 30593 and 30599. It matures in about 130 to 140 days and is prized (according to Chinese report) for its thin skin, heavy weight per bushel, and high oil content. It has been grown in this district for about 40 years."

30601. "Compact, round. Chinese name *Chin yuan tou*. Sample collected near Petuna, southwest of Harbin, at the confluence of the Nonni and the Sungari rivers, about 45° north latitude. Soy beans have not been grown more than 15 years in this district because the land was held until recently as an imperial preserve. The variety is doubtless the same common stock as Nos. 30593 and 30599."

30602 to 30604. TRITICUM AESTIVUM L.**Wheat.**

From San Luis Potosi, Mexico. Presented by Mr. Wilbert L. Bonney, American consul. Received April 22, 1911.

Seeds of the following:

30602. Red.

30604. Mixed.

30603. White.

"While San Luis Potosi is not a wheat-growing district, yet there is a certain amount of land to the south and west of the capital where wheat is raised, probably yielding about 200,000 bushels within the State. This wheat land extends southward and westward into Guanajuato and Jalisco. The varieties of wheat raised are red, white, and mixed. Medium-soft red wheat is said to give the best results, and the grade produced improves toward the south of the district mentioned above." (*Bonney.*)

30605. CITRUS sp.

From Bahia, Brazil. Presented by Mr. Southard P. Warner, American consul. Received April 24, 1911.

"Seed of *Laranja da Terra*. This variety of citrus is used extensively at Bahia, the home of the Bahia navel oranges, as a stock on which to graft this remarkable seedless orange which has been so phenomenally successful in America. It is claimed that the Bahia navel when grafted on this stock thrives and bears better than when worked on the other common citrus stock known as the *Laranja tanga*.

"There is some doubt as to whether these are really distinct varieties or simply names given by cultivators to designate seedlings grown on the particular plantation from those grown elsewhere." (*Fairchild.*)

Cuttings of this variety were received and listed under No. 29165.

30606 to 30610. STIPA spp.**Feather grass.**

From Erfurt, Germany. Purchased from Haage & Schmidt. Received April 25, 1911.

Seeds of the following:

30606. *STIPA ELEGANTISSIMA* Labill.

Distribution.—In the river valleys and along the coast in the provinces of South and West Australia, New South Wales, and Victoria in Australia, and also reported from Tasmania.

30607 and 30608. *STIPA GIGANTEA* Link.

Distribution.—In sandy places in Portugal and Spain, and in the island of Sicily.

30606 to 30610—Continued.**30609. STIPA PENNATA L.**

Distribution.—Europe and western Asia, extending from the British Isles and Spain eastward to western Siberia, Afghanistan, and Armenia.

30610. STIPA SPLENDENS Trin.

Distribution.—The region of Siberia east of Lake Baikal.

30611. PISTACIA ATLANTICA Desf.**Betoom.**

From Maison Carree, Algeria. Presented by Dr. L. Trabut, Algiers, Algeria. Received April 25, 1911.

See No. 9325 for description.

30612 and 30613. SOLANUM NIGRUM L.**Nightshade.**

From France. Presented by Vilmorin-Andrieux & Co., Paris, France. Received April 25, 1911.

Seeds of the following:

30612. "Morelle de l'Ile de France (Mascareigne Brède, nightshade spinach)."

30613. "Morelle noire (nightshade)."

"The former kind, which is cultivated in Mauritius under the name of Brède, does not differ botanically from the common kind (morelle noire), but is more vigorous and larger in all its parts." (*Vilmorin-Andrieux & Co.*)

30614 to 30619. PUNICA GRANATUM L.**Pomegranate.**

Material furnished this office by Mr. T. H. Kearney, Physiologist in Charge, Alkali and Drought Resistant Plant Breeding Investigations, Bureau of Plant Industry. Numbered April 26, 1911.

Plants of the following; notes by Mr. Kearney:

30614. "Green-skinned, sweet variety, from cuttings furnished by Miss Ida Munro, Putnam, Ga."

30615. "Red, sweet, from same source as preceding."

30616. "Subacid, from same source as preceding."

30617. "From Mexico; cuttings furnished by Mr. Alexander Gaw."

30618. "From Mexico; cuttings furnished by Señor Romulo Escobar."

30619. "Cuttings from the hardy bush at the east entrance of the Smithsonian Institution Building, Washington, D. C."

30620 and 30621.

From Palestine. Presented by Mr. Aaron Aaronsohn, director, Jewish Agricultural Experiment Station, Haifa, Palestine. Received April 25, 1911.

Seeds of the following:

30620. CITRUS LIMETTA Risso.**Sweet lime.**

"The Jaffa orange, which is the great commercial orange of Palestine, 800,000 cases being exported annually, is generally grafted on this special sweet lime, which Mr. Aaronsohn writes us is not used either in North Africa or in the United States. As a stock this sweet lime requires less water and produces trees yielding earlier fruit than does the bitter orange." (*Fairchild.*)

30621. ZIZIPHUS JUJUBA Miller.**Jujube.**

"*Anaab*, in Arabic. These seeds came from trees growing in the gardens in the vicinity of Nablus (Shechem) on dry, rocky, and calcareous hills." (*Aaronsohn.*)

30622 and 30623. MEDICAGO SATIVA L.**Alfalfa.**

From Palestine. Presented by Mr. Aaron Aaronsohn, director, Jewish Agricultural Experiment Station, Haifa, Palestine. Received April 25, 1911.

Seeds of the following; notes by Mr. Aaronsohn:

30622. "*Fussa*. The current variety cultivated in and around Damascus."

30623. "*Fussa (Menoukhie)*. A selected variety of No. 30622."

30624. VACCINIUM VITIS-IDAEA L.**Cowberry.**

From Hamburg, Germany. Presented by Mr. C. Widmaier, inspector, Botanical Gardens and Museum. Received April 26, 1911.

Introduced for purposes of botanical study and breeding work.

Rooted cuttings.

30625 and 30626. COLOCASIA spp.**Dasheen.**

From Hilo, Hawaii. Presented by Mr. F. A. Clowes, superintendent, Hilo and Olaa Substations, Hawaii Agricultural Experiment Station. Received April 25, 1911.

Tubers of the following:

30625. *Palaii*.

30626. *Royal White* or *Lehua keo-keo*.

"Tubers purple fleshed and apparently nonacid. The sprouts are also purple." (R. A. Young.)

See No. 29840 for further remarks.

30627. SPONDIAS PINNATA (L.) Kurz.

From Peradeniya, Ceylon. Presented by Mr. H. F. Macmillan, curator, Royal Botanic Garden. Received April 26, 1911.

30628 to 30671.

Received through Mr. Frank N. Meyer, agricultural explorer, April 24, 1911.

Seeds and cuttings as follows:

30628. PRUNUS ARMENIACA L.

Apricot.

From Bis-Karim, Chinese Turkestan. "(No. 908, January 20, 1911.) A variety of apricot called *Zeile Anjan*. Fruits medium large, red; early." (Meyer.)

30629. PRUNUS ARMENIACA L.

Apricot.

From Bis-Karim, Chinese Turkestan. "(No. 909, January 20, 1911.) A variety of apricot called *Ak-yarlik*. Fruits of pale color, medium large; ripening early, in June." (Meyer.)

30630. PRUNUS ARMENIACA L.

Apricot.

From Bis-Karim, Chinese Turkestan. "(No. 911, January 20, 1911.) A variety of apricot, called *Kara-Anjan*. Fruits medium large, dark red, fresh, sweet; a late ripener, August." (Meyer.)

30631. PRUNUS ARMENIACA L.

Apricot.

From Bis-Karim, Chinese Turkestan. "(No. 912, January 20, 1911.) A variety of apricot called *Guanauruk*. Fruits large, pale-orange colored. Kernels large and sweet. See also remarks under No. 30311." (Meyer.)

30632. PRUNUS ARMENIACA L.

Apricot.

From Bis-Karim, Chinese Turkestan. "(No. 913, January 20, 1911.) A variety of apricot called *Ak-Tuyan*. Fruits very pale yellow, very large, medium early in ripening. A rare local variety." (Meyer.)

30628 to 30671—Continued.

30633. ELAEAGNUS ANGUSTIFOLIA L.

Oleaster.

From Kashgar, Chinese Turkestan. "(No. 923, January 29, 1911.) This bears large fruits of a pale-orange color. It is a vigorous grower. Seeds sent under No. 30412; see this number for further remarks. Native name *Djigda*." (Meyer.)

30634. PRUNUS ARMENIACA L.

Apricot.

From Kashgar, Chinese Turkestan. "(No. 924, January 31, 1911.) A very early variety of apricot. Fruits smooth, of red color. Kernel sweet." (Meyer.)

30635. MALUS sp.

Apple.

From Kashgar, Chinese Turkestan. "(No. 928, February 4, 1911.) An apple called *Kizil alma*. Fruits large, of red color and fresh, sweet taste. Ripens in July. Suitable for hot, dry regions." (Meyer.)

30636. ERUCA SATIVA Hill.

Roquette.

From near Kurvas, Chinese Turkestan. "(No. 1510a, December 4, 1910.) A plant called *Sarich beda*, meaning yellow lucern. Grows as an annual weed in wheat and barley fields at an altitude of about 8,000 feet. Said to be much liked by cattle. To be tested in the cooler regions of the United States." (Meyer.)

Distribution.—An annual plant belonging to the mustard family and growing in the countries bordering on the Mediterranean from Spain to Syria and in northern Africa, and extending eastward to Turkestan.

30637. APOCYNUM VENETUM L.

From Yarkand, Chinese Turkestan. "(No. 1517a, November 9, 1910.) A fiber plant, growing on moist, saline, sandy places. The natives make ropes and string from the fiber, but it is not considered a very good material. These plants are not cultivated in any way, but grow in a jungle, more or less in the sandy expanses along watercourses. As the rhizomes are capable of running considerable distances, these plants should be tested where there is no chance of their becoming a nuisance. There seems to be some variation in quality and color of the fiber, probably due to soil and to treatment. It is said that this Apocynum fiber is exported from Kulja to Russia and that it forms an ingredient in the Russian bank notes. This variety is called *Ak-chilga*, meaning white fiber, and was collected not far from Yarkand. Obtained through the Hon. George Macartney, British consul, Kashgar." (Meyer.)

Distribution.—Southern Europe and Asia, extending from northern Italy through Russia and Dzungaria to China.

30638. APOCYNUM VENETUM L.

From Yarkand, Chinese Turkestan. "(No. 1518a, November 9, 1910.) This variety is called *Tokachilga*. It was collected near Merket, to the north of Yarkand, where veritable jungles of it are said to exist. It is supposed to be much taller growing than the preceding number (No. 30637), but is of an inferior quality. It was obtained through the same source." (Meyer.)

30639. CITRULLUS VULGARIS L.

Watermelon.

From Kashgar, Chinese Turkestan. "(No. 1522a, January 28, 1911.) A watermelon of round-oval shape, medium size, light-green rind, dark-red flesh of very sweet taste; seeds black, with curious markings. An early ripener, but not a keeper. To be tested like No. 30396." (Meyer.)

30628 to 30671—Continued.

30640. CUCUMIS MELO L.

Muskmelon.

From Guma, Chinese Turkestan. "(No. 1523a, November 16, 1910.) A large, oval winter melon of excellent keeping and shipping qualities. Rind rough and of yellow color; flesh white, firm, of fresh, sweet taste. Does best in a light, sandy soil.

"All these central Asian melons will do best in those parts of the United States where the summers are very hot and dry and where the soil contains some saline matter." (*Meyer.*)

30641. CUCUMIS MELO L.

Muskmelon.

From Karawag, Chinese Turkestan. "(No. 1524a, December 10, 1910.) A rare, local variety of melon, called *Tuna*. This melon often grows 1 yard long, while not being any thicker around than a beet root. It will keep until June. The flesh is white, not very juicy, but firm; taste moderately sweet; rind yellowish green; few seeds. Stands shipping remarkably well. Could be served sliced like pineapple at high-class dinners in the middle of winter." (*Meyer.*)

30642. CUCUMIS MELO L.

Muskmelon.

From Shagra-bazar, Chinese Turkestan. "(No. 1527a, December 23, 1910.) An early melon of medium size and long oval shape. Rind dark green; flesh reddish, not very sweet. A good keeper and shipper. Called *Kara Kutcha*." (*Meyer.*)

30643. CUCUMIS MELO L.

Muskmelon.

From Kashgar, Chinese Turkestan. "(No. 1530a, January 28, 1911.) A very early, small melon of green color, flattened shape, slightly ribbed; flesh yellowish green and honeysweet. Called *Kara Kash*." (*Meyer.*)

30644. PRUNUS ARMENIACA L.

Apricot.

From Oasis of Sandju, Chinese Turkestan, altitude 6,000 feet. "(No. 1537a, December 4, 1910.) Stones of cultivated apricots, collected here and there. To be sown out in some dry northern locality to obtain hardy types. See remarks made under No. 30355." (*Meyer.*)

30645. PRUNUS ARMENIACA L.

Apricot.

From Khotan, Chinese Turkestan. "(No. 1538a, November 24, 1910.) A variety of apricot called *Guana* or *Guama uruk*. See remarks made under No. 30311." (*Meyer.*)

30646. PRUNUS ARMENIACA L.

Apricot.

From Karghalik, Chinese Turkestan. "(No. 1539a, December 12, 1910.) An apricot said to be *Guana uruk*. There are, however, bitter kernels in this lot, and therefore they are mixed, as the *Guana* has large sweet kernels. See remarks made under No. 30311." (*Meyer.*)

30647. AMYGDALUS PERSICA NECTARINA Ait.

Nectarine.

From Khotan, Chinese Turkestan. "(No. 1540a, November 24, 1910.) A nectarine called *Togatch Moneck*. To be sown in a cold, dry climate to see if hardy types appear among them." (*Meyer.*)

30648. AMYGDALUS PERSICA NECTARINA Ait.

Nectarine.

From Guma, Chinese Turkestan. "(No. 1541a, November 14, 1910.) A small late variety of nectarine, white in color, of fresh, sweet taste and good keeping qualities. To be sown out like preceding number (No. 30647)." (*Meyer.*)

30628 to 30671—Continued.

30649. PRUNUS sp.

Plum.

From Langru, Chinese Turkestan. "(No. 1543a, November 26, 1910.) A plum called *I-nar-low*. Much used as a compote and stewed with meats. Said to aid the digestion of meat." (*Meyer*.)

30650. BERBERIS sp.

Barberry.

From Pustan Terek, Chinese Turkestan. "(No. 1549a, December 29, 1910.) A tall-growing barberry; branches armed with long spines and bearing large blue berries. Found between rocks and in stony débris at altitudes of 6,000 to 8,000 feet. Of possible value as an ornamental park and garden shrub in the northern sections of the United States." (*Meyer*.)

30651. BERBERIS sp.

Barberry.

From Pustan Terek, Chinese Turkestan. "(No. 1550a, December 29, 1910.) A very spiny, compact-growing barberry, bearing blue berries; found on a stony mountain slope at an altitude of about 7,000 feet. Of possible value as a hedge plant and an ornamental shrub in the northern sections of the United States." (*Meyer*.)

30652. FRAXINUS sp.

Ash.

From Khanaka, Oasis of Sandju, Chinese Turkestan, altitude of 6,000 feet. "(No. 1552a, December 4, 1910.) This number is perhaps the same species of ash as No. 30414, but grew at a much higher elevation. To be tried in the dry, cold sections of the United States. Native name *I-mo-don*." (*Meyer*.)

30653. COLUTEA sp.

From near Kizil-Kurgan, Russian Turkestan. "(No. 1554a, October 11, 1910.) A spiny shrub growing here and there on dry, sunburned, rocky mountain slopes. Of possible value as an ornamental garden and park shrub in dry and hot sections of the United States." (*Meyer*.)

30654. CARAGANA sp.

From Pustan Terek, Chinese Turkestan. "(No. 1555a, December 28, 1910.) A Caragana of tall-growing habits, often attaining a height of 6 to 8 feet. Occurs on dry, stony places at altitudes of 6,000 to 8,000 feet. Native name, *Karagan*. Of possible value as an ornamental park and garden shrub in the northern sections of the United States." (*Meyer*.)

30655. CARAGANA sp.

From Pustan Terek, Chinese Turkestan. "(No. 1556a, December 28, 1910.) A Caragana of very dwarf, compact growth, occurring in stony débris at altitudes ranging from 6,000 to 8,000 feet. Apparently the same as sent under No. 30153. See remarks made under that number. To be tested in the northern sections of the United States. Native name *Karagan*." (*Meyer*.)

30656. LONICERA sp.

From near Irkestan, Russian Turkestan. "(No. 1557a, October 15, 1910.) A shrubby, compact-growing honeysuckle occurring in dry, stony, and wind-swept places. Cuttings sent under No. 29146, which number see for further remarks." (*Meyer*.)

30657. ROSA sp.

Rose.

From near Khotan, Chinese Turkestan. "(No. 1558a, November 20, 1910.) A wild rose which, when grown in hedges, attains a height of 10 to 15 feet, but when standing alone only 5 to 6 feet. To judge by the fruits, it seems to be very floriferous. Stands drought and alkali well. Of value, possibly, as an ornamental shrub in large grounds or as a stock in hot, arid regions." (*Meyer*.)

30628 to 30671—Continued.**30658. NITRARIA RETUSA (Forsk.) Aschers.**

From near Bis-Wick, Chinese Turkestan. "(No. 1559a.) The desert currant, a species closely allied to that of which seed was sent under No. 29250 from a different locality. See remarks under that number." (Meyer.)

Distribution.—The countries along the Mediterranean in northern Africa and eastward through Palestine and Syria to Turkestan.

30659. ASPARAGUS sp.**Asparagus.**

From Ism-Salah, Chinese Turkestan. "(No. 1560a, December 7, 1910.) A wild asparagus found on sandy, saline land. Of slightly twining habit and generally found growing in scattered clumps." (Meyer.)

30660. CALLIGONUM sp.

From near Guma, Chinese Turkestan. "(No. 1561a, November 16, 1910.) A small variety existing in absolutely sandy deserts; makes enormous long roots. Grubbed out and used as fuel by the natives. Is of good sand-binding qualities and should be tested for this purpose at some experiment station in a desert." (Meyer.)

30661. MELILOTUS ALBA Desf.**Sweet clover.**

From near Susan, Chinese Turkestan. "(No. 1562a, December 7, 1910.) A sweet clover occurring on dry, sandy places. Observed only once. To be tested in a hot, dry region, under irrigation." (Meyer.)

30662. ALHAGI PSEUDALHAGI (Bieb.) Desv.**Camel's thorn.**

(*Hedysarum pseudalhagi* Bieberstein, Flora Taurico-Caucasica, vol 2, p. 174, 1808.)

This leguminous manna-producing shrub was first given a distinctive binomial name by Bieberstein in 1808, as *Hedysarum pseudalhagi*. Fischer, in 1812 (Catalogue Jardin Gorenki, p. 72), transferred it to the genus *Alhagi* but used the name *Alhagi camelorum*, by which the plant has since been known. Desvaux (Journal de Botanique, vol. 1, 1813, p. 120) states that there are two species, *Alhagi mannifera* and *pseudalhagi*, but does not describe them. His evident intention being to publish the binomial *Alhagi pseudalhagi*, he is here given as the authority for the name.

From near San-Kia, Chinese Turkestan. "(No. 1563a, November 17, 1910.) A very prickly, herbaceous, perennial legume, occurring on very dry lands, often in pure sand and shifting sand at that; also found on rather strong alkaline soil. Its uses are as follows: On the places where it abounds in great quantities it is cut and harvested like hay, to be used as a fuel. Most of the bricks in Russian Turkestan have been baked by means of this fuel. It is also a favorite food of the camel, which browses upon the herbage as long as it is not too old; sheep and goats also like it when it is young and the spines have not become too hard. Lastly, as a sand binder it has great value, but only in locations far removed from lands that may become cultivated, for this camel's thorn becomes a very serious pest in cultivated fields and is extremely hard to eradicate, as it throws up suckers from its broken-off roots. The pinkish brown flowers, which appear in enormous masses and give color to whole desert landscapes in the month of June, seem to be rich in honey. This plant should be tested at some experiment station in the desert of the southwestern United States." (Meyer.)

30663. IRIS sp.**Iris.**

From near Upal, Chinese Turkestan. "(No. 1564a, December 31, 1910.) An Iris, probably *I. ensata*, found here and there along the fields on rather alkaline soils. The leaves form a very common tying material all through

30628 to 30671—Continued.**30663—Continued.**

Chinese Turkestan, being mostly used to tie bunches of vegetables and grapes. Recommended as a tying-material supplier in the vegetable garden and as a lining plant along flower or shrubbery beds in dry, alkaline sections. It is said to flower prettily in early summer with small, pale-blue flowers. Probably a variety of No. 29264." (*Meyer.*)

30664. ELYMUS DAHURICUS Turcz.**Wild rye.**

From Pustan Terek, Chinese Turkestan, altitude of 6,000 to 7,000 feet. "(No. 1565a, December 29, 1910.) A tall perennial rye-grass occurring on dry loess banks along a ravine. Apparently rare. The long strong stems of golden-yellow color could be used perhaps to make straw braid; also to sip cool drinks through. To be tested in the Rocky Mountain regions or farther west." (*Meyer.*)

Distribution.—Dry, stony places in the southern part of Siberia from Turkestan eastward to the region beyond Lake Baikal.

30665. AGROPYRON ACUTUM (DC.) Roem. and Schult.

From Pustan Terek, Chinese Turkestan. "(No. 1566a, December 29, 1910.) A tall grass, occurring intermixed with the preceding one. May possess value as a forage grass in dry mountainous regions." (*Meyer.*)

Distribution.—Considered to be a possible hybrid between *Agropyron repens* and *A. junceum*, growing throughout Europe and eastward to China.

30666. SESLEREA ARGENTEA Savi.

From near Gagri, Caucasus, Russia. "(No. 1567a, February 1, 1911.) Found on mountain slopes between boulders and washed-down earth. May possess value as a fodder grass in mild-winter regions." (*Meyer.*)

Distribution.—Southern Europe and western Asia, extending from Spain through Italy, the Balkan region, and Bulgaria to Asia Minor and the Caucasus region.

30667. CUCUMIS SATIVUS L.**Cucumber.**

From Yarkand, Chinese Turkestan. "(No. 1568a, November 7, 1910.) A local variety of cucumber, called *Baddering*. Said to be small, whitish green, and early. To be tested under irrigation in the hot, arid sections of the United States." (*Meyer.*)

30668. CAPSICUM ANNUUM L.**Red pepper.**

From Yarkand, Chinese Turkestan. "(No. 1569a, November 7, 1910.) A variety of chili pepper of very bright-orange color. Shape medium long, nose blunt, and slightly ribbed. Native name *Kizil mutch*. To be tested like the preceding number (No. 30667)." (*Meyer.*)

30669. OCYMUM BASILICUM L.**Sweet basil.**

From Yarkand, Chinese Turkestan. "(No. 1570a, November 7, 1910.) This is very much grown all through Asia as a garden plant. Occurring in many varieties. Small bunches of the basil are worn on the side of the head, tucked away beneath the headcloth. Some religious meaning seems to be attached to it. Of value as a flavoring herb in regions where it is too warm for mint or thyme." (*Meyer.*)

30670. HORDEUM sp.**Barley.**

From Yarkand, Chinese Turkestan. "(No. 1581a, December 19, 1910.) A hull-less barley of opaque white color, called *Galangatch arpa*." (*Meyer.*)

30628 to 30671—Continued.**30671. TRITICUM AESTIVUM L.****Wheat.**

From Ism-Salah, Chinese Turkestan. "(No. 1582a, December 6, 1910.) A very large variety of summer wheat, called *Ak-boogdai*. Only a very small quantity obtained." (*Meyer*.)

30672. ANDROPOGON SCHOENANTHUS L.**Lemon grass.**

From Monghyr, Bengal, India. Presented by Mr. Lalit Mohan Sinha, Lalloo Pokhar Road. Received April 25, 1911.

"This is called *Agya Ghas*, or fire-grass, in Hindustani. It is used here with tea as a stimulant and to remove the pain consequent upon catching cold. In cases of sprains and hurts the leaves are made into a paste and applied over the painful part to alleviate the pain. Its oil is also used for the same purpose. It needs an alluvial soil to grow luxuriantly. The roots should be taken out every year after the rains and transplanted in a well-cultivated soft soil. It is not very much cultivated now and is being neglected, but the demand for it is increasing for medicinal use." (*Sinha*.)

Imported for the work of the Office of Drug-Plant, Poisonous-Plant, and Physiological Investigations in cultivating and testing all procurable species of oil-grasses.

Roots.

30673. SAPINDUS sp.**Soapberry.**

From Maison Carree, Algeria. Presented by Dr. L. Trabut, Algiers, Algeria. Received April 25, 1911.

Cuttings.

30674 to 30676.

From Shunking, West China. Presented by Rev. A. E. Evans. Received April 25, 1911.

Cuttings of the following:

30674. CITRUS sp.**30675. PRUNUS sp.****Plum.****30676. MORUS sp.****Mulberry.****30677. ZIZIPHUS JUJUBA Miller.****Jujube.**

From Tsining, via Tsinan, Shantung, China. Procured through Dr. Charles H. Lyon. Received April 26, 1911.

"These cuttings are from two trees growing in our compound that bear very nice fruit." (*Lyon*.)

30678. DIOSPYROS KAKI L. f.**Persimmon.**

From Tokyo, Japan. Presented by Miss B. Catherine Pifer. Received April 27, 1911.

"*Shibu kaki*. These grafts are from a species of the *Diospyros*, or *Mame kaki*, which is known as the best variety for the 'shibu' (juice of fruit). This is the natural fruit and is not edible. This species is found quite frequently in the country." (*Pifer*.)

"'Kaki-no-shibu' is the expressed juice of small, inedible varieties of persimmons. These persimmons are taken about two months before they ripen, i. e., in the middle of August, and crushed—seeds, calyx, and all—in a large stone mortar. Water is added, the juice is strained through coarse linen cloth, and it is then put into a large earthen jar which is closed with a wooden top; paper is pasted over this to make it air-

30678—Continued.

tight, it is placed in a cellar or cave to keep cool, and is ready for use. This fresh-strained juice is simply spread on paper with a brush, which is said to render the paper immune from the attacks of insects as well as less pervious to moisture. Cloth is sometimes treated with this juice, and it is also used for painting stencils, tanning fishing nets, and for other purposes." (*Fairchild.*)

Cuttings.

30679 to 30682. SOLANUM NIGRUM L.**Nightshade.**

From Albano, Stockholm, Sweden. Presented by Dr. Veit Wittrock, director, Botanic Gardens. Received April 26, 1911.

Seeds of the following. Introduced for the purposes of botanical study and breeding work.

30679. Yellow fruited.**30681.** Gold fruited.**30680.** Black fruited.**30682.** Green fruited.**30683. MUSA TEXTILIS Nee.****Manila hemp.**

From Philippine Islands. Presented by Mr. M. M. Saleeby, in charge of fiber plants, Bureau of Agriculture, Manila, through Mr. Lyster H. Dewey. Received March 10, 1911. Numbered April 28, 1911.

Maguindanao.

30684 and 30685. CUCUMIS MELO L.**Muskmelon.**

From the sandy plains near Erivan, Russian Armenia, at the foot of Mt. Ararat.

Presented by Mr. W. W. Masterson, American consul, Kharput, Mamuret-ul-Aziz, Turkey, who had them procured by Mr. Alexander Heingartner, American consul, Batum, Russia. Received April 27, 1911.

"These are the finest flavored of any melons I have ever tasted anywhere, and are good to eat from the time they mature in the late summer until some time after Christmas. A particular point in their favor is they are so firm that they can be shipped any distance." (*Masterson.*)

30686 to 30696.

From China. Collected by Mr. George Forrest; presented by Mr. A. K. Bulley, Liverpool, England. Received April 7, 1911.

Seeds of the following; quoted notes by Mr. Forrest:

30686. RHUS VERNICIFERA DC.**Lacquer tree.**

"The lacquer tree of Lichiang Range, western Yunnan."

Distribution.—Southern Asia, extending from the Himalayas in Kashmir, Sikkim, and Bhutan and the Khasi Hills in India eastward through China to Japan; also in the island of Java.

See Nos. 2189, 5016, and 8406 for previous introductions.

30687. PISTACIA CHINENSIS Bunge.**Pistache.**

"Another of the varnish trees of Yunnan, from Langkong Valley at 8,000 feet. Grows from 40 to 80 feet tall."

See Nos. 21970, 24659, and 29499 for previous introductions.

30688. PINUS ARMANDI Franch.**Pine.**

"A tree that reaches a height of 70 to 200 feet. Cones 9 to 12 inches. Fruits edible, sold in all the markets. Chinese name *Song-si*. From Lichiang Range, latitude 27° 20' N., altitude 9,000 to 10,000 feet."

See No. 27046 for previous introduction.

30686 to 30696—Continued.**30689 to 30692.** PRUNUS DOMESTICA L.**Plum.****30689.** "From Lichiang Valley. Small purple plum, damson, good."**30690.** "From Lichiang Valley. Golden-drop plum, very fine."**30691.** "Same as the preceding."**30692.** "Same as the preceding."**30693.** (Undetermined.)

"From Lichiang Valley."

Probably belongs to the Solanaceæ.

30694. DIOSPYROS LOTUS L.

"From Lichiang Valley. Tree 20 to 50 feet tall. Flowers yellow. Fruit brown, edible."

See Nos. 27512 and 29486 for previous introductions.

30695. TRACHYCARPUS EXCELSUS (Thunb.) Wendl.**Palm.**

"Common in most valleys. In cultivation for the foliage sheaths, fiber of which is used for ropes, matting, etc."

See Nos. 26907, 27456, 28179, and 28180 for previous introductions.

30696. (Undetermined.)

"From Langkono Plain."

30701. STACHYS SIEBOLDI Miq.

From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received April 29, 1911.

Procured for the experiments of Dr. R. H. True, Office of Drug-Plant, Poisonous-Plant, and Physiological Investigations.

See No. 2195 for description.

30702 and 30703. SOLANUM spp.

From Kingston, Jamaica. Presented by Mr. W. Harris, Superintendent of Public Gardens. Received April 27, 1911.

Seeds of the following:

30702. SOLANUM SEAFORTHIANUM Andrews.*Distribution.*—An herbaceous climbing vine found from Venezuela to Guiana, and in the West Indies; cultivated in Panama.**30703.** SOLANUM ACULEATISSIMUM Jacquin.**30704 to 30706.** CINCHONA spp.**Cinchona.**

From Kingston, Jamaica. Presented by Mr. W. Harris, Superintendent of Public Gardens. Received April 27, 1911.

Seeds of the following:

30704. CINCHONA sp.

Hybrid.

30705. CINCHONA OFFICINALIS L.*Distribution.*—A tree growing in the tropical valleys of the Andes in Peru and Bolivia.**30706.** CINCHONA SUCCIRUBRA Pavon.

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30707. PHOENIX DACTYLIFERA L.**Date.**

From Morocco. Purchased from McCaig, Gilchrist & Co., Glasgow, Scotland.

Received April 29, 1911.

Tafelst. See No. 18630 for description.

30708 and 30709.

From Hermosillo, Mexico. Presented by Mr. Louis Hostetter, American consul.

Received April 27, 1911.

Seeds of the following:

30708. CICER ARIETINUM L.

Chick-pea.

30709. TRITICUM AESTIVUM L.

Wheat.**30710. SOLANUM CAPSICASTRUM Link.**

From Milan, Italy. Presented by Fratelli Ingegneri. Received April 27, 1911.

Fra Diavolo.

Distribution.—In the grassy plains along the Sapucahi River in the southern part of the province of Minas Geraes in Brazil.

30711. GOSSYPIUM HERBACEUM L.**Cotton.**

From Marash, Turkey. Presented by Mr. Paul N. Nersessian. Received April 26, 1911.

"This is what we call *Native of Marash*. It grows in a conical shape from 1 to 4 feet high, depending on the fertility of the land; usually yields well, that is, produces more bolls to a given area than other varieties, but ordinarily the amount of the lint from a given weight of bolls is less than the other varieties (Nos. 29028 and 29029)." (*Nersessian.*)

30712. MEDICAGO SATIVA L.**Alfalfa.**

From Pishpek, Semirjetschensk, Turkestan, Russia. Presented by Mr. Theo. Kryshstofovich, Russian Government Agricultural Commissioner, St. Louis, Mo. Received May 1, 1911.

30713 to 30736.

From Philippine Islands. Secured by Mr. C. V. Piper, Bureau of Plant Industry. Received April 17, 1911.

Seeds of the following; quoted notes by Mr. Piper:

30713. CANTHAROSPERMUM SCARABAEODEUM (L.) Baill.

"A leguminous vine growing in bushes and very fruitful. For testing in Florida."

Distribution.—Throughout the plains of India and up to an elevation of 6,000 feet in the western Himalayas and eastward to China and the Malay Archipelago; also in Madagascar.

30714. BAUHINIA ACUMINATA L.

"According to Mr. Merrill decidedly ornamental. It is a shrub 3 to 6 feet high. To be tested in Florida."

30715. COIX LACHRYMA-JOBI MA-YUEN (Rom.) Stapf.

Job's-tears.

"This is a variety with soft seeds, cultivated in China and to a slight extent here. It should be tried as a summer grain crop in the United States. Seed can probably be had in quantity from China, but not here."

Distribution.—In the province of Sikkim and on the Khasi Hills in India and eastward through Burma, Cochin China, and Borneo to the Philippines.

30713 to 30736—Continued.**30716. TERAMNUS LABIALIS (L.) Spreng.**

"A slender twining legume very abundant in thickets and often matting the ground in fields."

Distribution.—On the plains of India from the foot of the western Himalayas to Ceylon; generally naturalized throughout the Tropics and in Natal, South Africa.

30717. ARACHIS HYPOGAEA L.**Peanut.**

From Jolo.

30718 to 30720. RICINUS COMMUNIS L.**Castor bean.****30718.** From Negros Occidental.**30719.** From Iloilo.**30720.** From Iloilo.**30721 to 30726. VIGNA SINENSIS (Torner) Savi.****Cowpea.**

(Hasskarl, Catalogus Plantarum in Horto Botanico Bogoriensi, 1844, p. 279.)

The cowpea up to this time has been listed in these Inventories as *Vigna unguiculata* (L.) Walpers. Mr. C. V. Piper, in Bulletin 229, Bureau of Plant Industry, United States Department of Agriculture, p. 143, has identified the type specimen of *Dolichos unguiculatus* L. in the Linnæan Herbarium, on which *Vigna unguiculata* (L.) Walpers is based, as a species of *Phaseolus* which Urban in 1905 redescribed as *Phaseolus antillanus*. Apparently, therefore, the first name applied to the cowpea is *Dolichos sinensis* Torner (Centuria II. Plantarum, 1756, p. 28; reprinted in Linnæus's *Amoenitates Academicæ*, vol. 4, 1759, p. 326), on which is based the name here used.

30721. Mixed, buff, and reddish brown seed contained in this lot.
From Iloilo.

30722. Mixed, buff, and reddish brown seed contained in this lot.
From Negros Occidental.

30723. Blackeye. From Jolo.**30724.** Marbled reddish brown. From Negros Occidental.**30725.** Black. From Jolo.**30726.** Black. From Jolo.**30727 to 30730. PHASEOLUS CALCARATUS Roxb.****30727.** Black.**30728.** Greenish tan.**30729.** Reddish brown.**30730.** Brown and tan seeds mixed.

All of the above are from Iloilo.

30731 to 30733. PHASEOLUS RADIATUS L.**Adsuki bean.****30731.** Brown. From Moro Province.**30732.** Green. From Jolo.**30733.** Golden. From Iloilo.**30734 and 30735. CAJAN INDICUM Spreng.****Pigeon pea.****30734.** Black. From Iloilo.**30735.** White. From Ilocos Sur.**30736. CHAETOCLOA FLAVA (Nees) Scribner.****Millet.**

From Jolo.

30737. CITRUS LIMONUM Risso.**Lemon.**

From the Salvation Army Industrial Farm at Ani, Dalash P. O., via Simla, India.

Grown at an elevation of 4,000 feet in the famous Kulu Valley in the Himalayas. Presented by Mr. F. Booth Tucker, Salvation Army, Simla, India.

Received May 3, 1911.

"The trees and fruit from which these seeds were taken are very fine. I may add that we have had a particularly severe winter, with a considerable fall of snow in the valley. Our oranges and lemons were a good deal damaged by a hailstorm, but not by the accompanying frost and snow." (*Tucker.*)

30738. MEDICAGO SATIVA L.**Alfalfa.**

From Punjab, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanical Gardens, Seharunpur, United Provinces, India. Received May 2, 1911.

"Received from the Economic Botanist, Punjab, who writes that it is the best variety grown in that province." (*Hartless.*)

30739. SOLANUM NIGRUM L.**Nightshade.**

From Isla de Pinos. Presented by Rev. Cal. Ogburn, Los Angeles, Cal. Received March 10, 1911. Numbered May 3, 1911.

Introduced for purposes of botanical study and breeding work.

30740. SOLANUM NIGRUM L.**Nightshade.**

From Chico, Cal. Received through Mr. R. L. Beagles, special agent acting in charge, Plant Introduction Garden. Received April, 1911. Numbered May 3, 1911.

Introduced for the same purposes as the above.

30741. OLEA EUROPAEA L.**Olive.**

From Sfax, Tunis. Purchased from Chatel & Jacquemart, through Mr. T. H. Kearney. Received May 2, 1911.

Chemlali. See Nos. 22762 and 22763 for previous introduction.

Truncheons.

30742. ANACARDIUM EXCELSUM (Bertero and Balbis) Skeels.

(*Rhinocarpus excelsa* Bertero and Balbis; Humboldt, Bonpland, and Kunth, *Nova Genera et Species Plantarum*, vol. 7, 1825, p. 6, pl. 601.)

(*Anacardium* (?) *rhinocarpus* DC., *Prodromus*, vol. 2, 1825, p. 62.)

This Colombian tree, closely related to the cashew nut, was first named *Rhinocarpus excelsa* by Humboldt, Bonpland, and Kunth in 1825, and was afterwards placed in the genus *Anacardium* by De Candolle, who used the generic name of the original authors for his specific name. The binomial *Anacardium excelsum*, which is the correct name for the species according to present rules of nomenclature, seems never to have been published.

Anacardium excelsum is a tall tree found in the valley of the Magdalena River in northern Colombia, in the vicinity of Caracas in Venezuela, and in Panama and San Salvador.

From San Jose, Costa Rica. Presented by Mr. C. Wercklé, Department of Agriculture. Received May 3, 1911.

This Costa Rican species of cashew is recommended by Mr. O. F. Cook for trial as a stock for the mango in Florida.

30743. COLOCASIA sp.**Dasheen.**

From Mukden, Manchuria. The region of production not exactly known, but said to be in the northern part of Chihli Province, China. Procured by Mr. Edward C. Parker, agriculturist, Bureau of Agriculture, Industry, and Commerce. Received May 3, 1911.

"*Taro*. Chinese name *Yu to*." (Parker.)

"The tubers received were small and resembled those of the Japanese dasheens. They are mucilaginous and lacking in flavor when cooked. The tubers are nonacid even when uncooked." (R. A. Young.)

30744 to 30748.

From Wulukai, 20 miles north of Kirin, the capital of Kirin Province, Manchuria, 44° north latitude. Procured by Mr. Edward C. Parker, agriculturist, Bureau of Agriculture, Industry, and Commerce, Mukden, Manchuria. Received May 3, 1911.

Seeds of the following; quoted notes by Mr. Parker:

"Wulukai is the center of one of the most famous and fertile soil areas of north Manchuria. The climate is one of great extremes, temperatures ranging from 42° below zero Fahrenheit to 96° above zero. Killing frosts occur occasionally as late as May 10 and may reoccur after September 20. This district is said to have been partially settled for 75 years and the varieties of beans are reputed to be of the same age."

30744 to 30747. GLYCINE HISPIDA (Moench) Maxim.**Soy bean.**

30744. "Black-eyebrow soy bean. Chinese name *Hei mei tou*. This variety is classified by the Chinese as being medium late in date of maturity."

30745. Yellow. "White-eyebrow soy bean. Chinese name *Pei mei tou*. This variety is classified by the Chinese as being late in the date of maturity."

30746. Yellow. "Compact, round soy bean. Chinese name *Chin yuan tou*. This variety is classified by the Chinese as being late in date of maturity."

30747. "Big black soy bean. Chinese name *Tah hei tou*. This variety is classified by the Chinese as being very early in date of maturity. It is used principally as a feed for work horses and mules, also for bean curd and for oil production."

30748. PHASEOLUS RADIATUS L.**Mung bean.**

"Small green food bean. Chinese name *Hsiao liu tou*. Classified by the Chinese as being medium late in date of maturity. This variety is doubtless from the same stock as No. 28053. It is grown everywhere in Manchuria for human food, being boiled with kowliang or millet and also ground into meal, mixed with kowliang meal and made into vermicelli."

30749. IPOMOEA BATATAS (L.) Poir.**Sweet potato.**

From Auckland, New Zealand. Presented by Arthur Yates & Co. Received May 4, 1911.

"The New Zealand kumara has been chiefly grown by our native race, the Maori, and consequently any varieties which may have been distinct in the first place have long since become crossed so that it is now impossible to obtain separate sorts. The tubers sent are of the kumara which is known here as the New Zealand red-skinned kumara. This is a New Zealand variety which is in common use here." (Yates & Co.)

30750. NICOTIANA TABACUM L.**Tobacco.**

From Rosa Morada, Acaponeta District, Tepic, Mexico. Presented by Mr. Lauro Liadas, Director General of Agriculture, Mexico, Mexico. Received May 4, 1911.

"*Papantla*."

30751. COLOCASIA sp.**Dasheen.**

From Arimao, Cuba. Presented by Mr. Robert M. Grey, Harvard Botanical Station, Central Soledad, Cienfuegos, Cuba. Received May 8, 1911.

"A dasheen of good quality. When cooked it is mealy and nearly white." (*R. A. Young*.)

30752. ZINZIBER OFFICINALE Rosc.**White ginger.**

From Tsining, via Tsinan, Shantung, China. Presented by Dr. C. H. Lyon. Received May 3, 1911.

30753 to 30763.

From Edinburgh, Scotland. Presented by Dr. Isaac Bailey Balfour, director, Royal Botanic Gardens. Received April 25, 1911.

Seeds of the following:

30753. BERBERIS VIRESCENS Hook. f.**Barberry.**

For previous introduction see No. 27122.

30754. BUDDLEIA ALBIFLORA Hemsl.

Distribution.—The Patung district in the province of Hupeh, China.

30755. LUPINUS ARBOREUS Sims.**30756. LUPINUS POLYPHYLLUS Lindl.****30757. LUPINUS POLYPHYLLUS Lindl.**

Variety *moerheimi*.

30758. SCHIZONOTUS AITCHISONI (Hemsl.) Skeels.

(*Spiraea aitchisoni* and *Sorbaria aitchisoni* Hemsley, *Gardeners' Chronicle*, ser. 3, vol. 28, 1900, p. 254.)

-This spirealike shrub from Afghanistan was named *Spiraea aitchisoni* by Dr. Hemsley, but in closing the article he remarks as follows: "There is also a difference of opinion as to the limits of the genus *Spiraea*. The name *Sorbaria* was long ago proposed for *S. sorbifolia*; and *S. lindleyana*, *S. grandiflora*, and *S. kirilowi* belong to the same group. Taking this view, our plant would have to be called '*Sorbaria aitchisoni*.'" The generic name *Sorbaria* was published by A. Braun (Ascherson, *Flora Brandenburg*, p. 177) in 1864, with one species *Sorbaria sorbifolia*, based on *Spiraea sorbifolia* L. But in 1830 Lindley (*Introduction to the Natural System of Botany*, p. 81) established the genus *Schizonotus*, also based on *Spiraea sorbifolia* L. It is therefore necessary to use the binomial proposed above.

Schizonotus aitchisoni was first discovered by Dr. Aitchison in the valley of the Kuram River in Afghanistan at elevations of 7,000 to 9,000 feet and has also been reported from the province of Kashmir in northern India.

30759. CLETHRA ARBOREA Solander.

Distribution.—A small tree with elliptical, serrate leaves and fragrant white flowers in spicate racemes, found in the Madeira Islands.

30753 to 30763—Continued.**30760. GLORIOSA SUPERBA L.**

Distribution.—Throughout tropical India from the northwestern Himalayas to Ceylon and eastward to Malakka and Cochin China; also in the Mozambique district of eastern Africa and in Guinea on the western coast.

30761. CAJUPUTI HYPERICIFOLIA (Salisb.) Skeels.

(*Metrosideros hypericifolia* Salisb. Prodrumus, 1796, p. 351).

The seeds of this Australian shrub belonging to the family Myrtaceæ were received under the name *Melaleuca hypericifolia* Smith (Transactions of the Linnean Society, vol. 3, 1797, p. 279). The generic name *Melaleuca* was published by Linnaeus (Mantissa Plantarum, p. 105) in 1767, with one species, *M. leucadendra*, based on *Myrtus leucadendra* Stickman (Herbarium Amboinense, 1754, p. 9; reprinted in Linnaeus's Amoenitates Academicæ, vol. 4, 1759, p. 120). However, in 1763, Adanson (Familles des Plantes, vol. 2, pp. 84, 530) had published the generic name *Cajuputi*, based on plate 16 of volume 2 in Rumph's Herbarium Amboinense, the same plate on which *Myrtus leucadendra* was founded. It is therefore necessary to use the generic name *Cajuputi* for the species congeneric with *Myrtus leucadendra* Stickman. This course has already been adopted by Lyons (Plant Names, Scientific and Popular, 1900, p. 74); see No. 30793.

Distribution.—A tall shrub with rich red flowers in spikes 2 inches long, found in damp places in the vicinity of Port Jackson in New South Wales, Australia.

30762. PRIMULA BULLEYANA Forrest.**Primrose.****30763. PRIMULA LITTONIANA Forrest.****Primrose.****30764 to 30822.**

From Cambridge, England. Presented by Dr. R. Irwin Lynch, curator, University Botanic Garden, Cambridge University. Received April 25, 1911.

Seeds of the following:

30764. CLEMATIS INTEGRIFOLIA × VITICELLA.**Clematis.**

See No. 29927 for previous introduction.

30765. CLEMATIS GRAVEOLENS Lindl.**Clematis.**

Distribution.—On the temperate slopes of the western Himalayas at an elevation of 6,000 to 11,000 feet in northern India.

30766. CLEMATIS HERACLEAEFOLIA DC.**Clematis.**

Distribution.—On the slopes of the mountains in the provinces of Chihli and Shantung, China.

30767. CLEMATIS INTEGRIFOLIA L.**Clematis.**

See No. 28844 for previous introduction.

30768. CLEMATIS RECTA L.**Clematis.**

Distribution.—Southern Europe extending from northern Spain to central Russia.

30769. BERBERIS LYCIUM Royle.**Barberry.**

See No. 1603 for previous introduction.

Distribution.—On the dry, hot slopes of the Himalayas at an elevation of 3,000 to 9,000 feet in the northwestern part of India.

30770. × BERBERIS STENOPHYLLA Lindl.

30764 to 30822—Continued.

30771. CRAMBE CORDIFOLIA Stev.

Distribution.—An herbaceous perennial found in desert places at the foot of the northern slope of the Caucasus Mountains in the vicinity of Pyatigorsk and Mozdok, Russia.

30772. PITTOSPORUM CRASSIFOLIUM Solander.

Distribution.—Along the shores of the islands of New Zealand.

30773. PITTOSPORUM HETEROPHYLLUM Franchet.

Distribution.—A shrub 6 to 12 feet high growing on slopes of limestone mountains at an altitude of 7,000 feet in the province of Yunnan, China.

30774. CEANOTHUS VEITCHIANUS Hook.

Apparently a hybrid between some of the species native to the region around San Francisco Bay, Cal.

30775. CORIARIA TERMINALIS Hemsl.

Distribution.—A shrub found on the frontier between the province of Szechwan, China, and Tibet, and in Sikkim in northern India, at an altitude of 9,000 to 13,000 feet.

30776. ACACIA CAESIA (L.) Willd.

Distribution.—On the lower slopes of the Himalayas in the province of Behar and in Burma in India, and in the Malay Archipelago.

30777. ACACIA CYCLOPS Cunningham.

Distribution.—In the region around King George Sound and in the valleys of the Swan and Preston rivers in West Australia.

30778. ACACIA HAKEOIDES Cunningham.

Western black wattle.

Distribution.—Along the Lachlan and Severn Rivers in New South Wales, and in the Murray Desert in Victoria, Australia.

30779. ACACIA LEPTOCLADA Cunningham.

Distribution.—In New South Wales and on the eastern coast of Queensland in Australia.

30780. ACACIA LONGIFOLIA (Andr.) Willd.

See No. 26304 for previous introduction.

30781. ACACIA NERIIFOLIA Cunningham.

See No. 10477 for previous introduction.

Distribution.—In open forests on the Balonne River in Queensland, and in New South Wales and South Australia.

30782. ACACIA PENNINERVIS Sieb.

See No. 1827 for previous introduction.

Distribution.—Rocky slopes of the mountains in the provinces of Queensland, New South Wales, and Victoria, Australia, and in the island of Tasmania.

30783. ACACIA SPECTABILIS Cunningham.

Mudgee wattle.

See No. 1838 for previous introduction.

Distribution.—In the river valleys of Queensland and New South Wales, Australia.

30784. CARAGANA ARBORESCENS Lam.

Siberian pea tree.

See No. 29960 for previous introduction.

30785. CARAGANA ARBORESCENS Lam.

Siberian pea tree.

Variety *pendula*.

30764 to 30822—Continued.

30786. COLUTEA ARBORESCENS L.

Bladder senna.

See No. 1570 for previous introduction.

Distribution.—Southern Europe, western Asia, and northern Africa, extending from France and Germany eastward to Syria.

30787. COLUTEA ORIENTALIS Miller.

Distribution.—On stony hillsides in the Caucasus region of southeastern Russia and extending eastward through northern Persia to Turkestan.

30788. ROSA DAMASCENA Miller

Rose.

30789. ROSA CANINA L.

Rose.

See No. 26265 and 28236 for previous introductions.

30790. ROSA MACROPHYLLA Lindl.

Rose.

See No. 28239 for previous introduction.

30791. SCHIZONOTUS AITCHISONI (Hemsl.) Skeels.

See No. 30758 for previous introduction.

30792. ULMARIA FILIPENDULA (L.) Hill.

Distribution.—In meadows, pastures, and open woods of Europe and Asia, extending eastward to Dzungaria and the Altai Mountains.

30793. CAJUPUTI ERICIFOLIA (Smith) Lyons.

Bottle-brush tea-tree.

Distribution.—A tall shrub or small tree growing in swampy ground along streams or near the sea in the provinces of New South Wales and Victoria, Australia, and in Tasmania.

30794. CAJUPUTI HYPERICIFOLIA (Salisb.) Skeels.

30795. CAJUPUTI PUBESCENS (Schauer) Skeels.

(*Melaleuca pubescens* Schauer, in Walpers' Repertorium, vol. 2, 1843, p. 928.)

The reason for the use of the generic name Cajuputi for the plants usually known as *Melaleuca* is explained under No. 30761.

Distribution.—A tall shrub or small tree found along the banks of streams in Victoria and South and West Australia, Australia.

30796. CARUM CARVI L.

Caraway.

See No. 26445 for previous introduction.

30797. COREOPSIS TINCTORIA Nuttall.

See No. 12975 for previous introduction.

30798. DAHLIA GRACILIS Ortega.

Dahlia.

See No. 28216 for previous introduction.

30799. DAHLIA MERCKII Lehm.

Dahlia.

See Nos. 21554 and 21555 for previous introductions.

Distribution.—In the region of San Luis Potosi in northern Mexico, and on the summit of a mountain near Guadalupe in southern Mexico.

30800. SENECIO VEITCHIANUS Hemsl.

Distribution.—A yellow-flowered herbaceous perennial found in bogs and wet places at an altitude of 4,000 to 6,000 feet in the province of Hupeh, China.

30801. PRIMULA KEWENSIS Hort.

Primrose.

A hybrid of garden origin between *Primula floribunda* and *P. verticillata*.

30764 to 30822—Continued.

30802. *FRAXINUS EXCELSIOR* L.

Ash.

Distribution.—Throughout central and northern Europe and in the Caucasus region of western Asia.

30803. *FRAXINUS EXCELSIOR* L.

Ash.

Variety *pendula*.

30804. *BUDDLEIA ALBIFLORA* Hemsl.30805. *BUDDLEIA HEMSLEYANA* Koehne.

Distribution.—In the provinces of Hupeh and Szechwan, China.

30806. *BUDDLEIA VARIABILIS* Hemsl.

Distribution.—A shrub growing on the slopes of the mountains up to 6,000 feet in the provinces of Hupeh and Szechwan, China.

30807. *VERONICA SALICIFOLIA* Forster.

Distribution.—A shrub from 3 to 15 feet high growing from sea level to 3,500 feet elevation in the islands of New Zealand.

30808. *VISCUM ALBUM* L.

Mistletoe.

See No. 24666 for previous introduction.

30809. *PTEROCARYA FRAXINIFOLIA* (Lam.) Spach.

Caucasian walnut.

Distribution.—A tree found in the woods bordering on the southern parts of the Black and Caspian seas, and in the northern part of Persia.

See No. 27768 for previous introduction.

30810. *PTEROCARYA STENOPTERA* DC.

Wing nut.

See No. 6609 for previous introduction.

Distribution.—On mountain slopes in the provinces of Kiangsu, Chekiang, Kiangsi, Hupeh, Szechwan, Yunnan, and Kwangsi, China.

30811 and 30812. *BETULA NANA* L.

Birch.

30811. Variety *crenata*.30812. Variety *pendula*.30813. *LARIX DAHURICA* Turcz.

Siberian larch.

Variety *pendula*.

30814. *LARIX LEPTOLEPIS* (Sieb. and Zucc.) Gord.

Japanese larch.

See No. 6672 for previous introduction.

Distribution.—Slopes of the mountains in northern and central Japan extending from Hokushu (Yezo) southward to the region around Yokohama.

30815. *PINUS HALEPENSIS* Miller.

Pine.

Distribution.—On dry hills in the countries bordering on the Mediterranean from Portugal to Syria and in northern Africa.

30816. *ALPINIA MUTICA* Roxb.

Distribution.—An herbaceous perennial with large white flowers variegated with red and yellow, found in the Malay Peninsula and in the Malay Archipelago.

30817. *IXIOLIRION TATARICUM* (Pall.) Herbert.

Distribution.—A bulbous herbaceous perennial growing from the Caucasus region eastward through southern Siberia and Turkestan to Dzungaria.

30818. *ASPARAGUS CRISPUS* Lam.

Asparagus.

See No. 30219 for previous introduction.

30764 to 30822—Continued.**30819.** ASPARAGUS SCANDENS DEFLEXUS Baker.**Asparagus.**

See No. 29120 for previous introduction.

30820. LIVISTONA HOOGENDORPII Andre.**Palm.**

See No. 9724 for previous introduction.

Distribution.—A palm from the island of Java.**30821.** AGROSTIS CANINA L.**Rhode Island bent-grass.**

See No. 18413 for previous introduction.

30822. DACTYLIS GLOMERATA L.**Orchard grass.****30823.** GOSSYPIUM BARBADENSE L.**Cotton.**

From Alexandria, Egypt. Presented by Mr. D. S. Fish, secretary, Horticultural Society. Received May 16, 1911.

Sakellaridis. "This variety is of quite recent introduction and produces the best Egyptian cotton. The seed sent is said to have been saved from selected plants." (*Fish.*)**30824.** MUCUNA IMBRICATA DC.

From Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received May 23, 1911.

Distribution.—In the tropical region of India, rising to an elevation of 4,000 feet in the eastern Himalayas.**30825 to 30827.** VITIS VINIFERA L.**Grape.**

From Tiflis, Caucasus, Russia. Presented by Mr. A. Rolloff, Botanic Garden. Received May 6, 1911.

Cuttings of the following:

30825. *Mskhali.* A dessert variety. Does well in alkaline soils. Ripens from September 1 to 15.**30826.** *Bandi.* Fruitful dessert variety. May be kept until Easter.**30827.** *Schafei.* This appears to be the same as the Shafai, No. 27621; see this number for description.**30828.** MUSA sp.**Banana.**

From Pirapo, Paraguay. Presented by Mr. C. F. Mead. Received May 6, 1911.

"Paraguayan banana, botanical name unknown unless it is a sport from Musa sapientium. Grows to a height of 20 to 25 feet, very large and heavy leaves which are raveled easily by the wind, making a dirty and unpopular plant. Fruit in very large bunches up to 100 pounds in weight and classed by many travelers as the finest flavored of all bananas, which is my opinion also as compared with Hawaiian, Mexican, Central American, and Brazilian varieties." (*Mead.*)**30829 and 30830.** MEDICAGO spp.**Alfalfa.**

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, May 3, 1910. Numbered May 8, 1911.

Plants of the following:

30829. From near Yelisavetpol, Caucasus, Russia.*"(No. 756, April 7, 1910.) An alfalfa growing wild along banks of ravines, in open plains, and along roads, in rather heavy, clayey soil. Much sought for by grazing cattle and horses, who grow fat on it. Called by local German*

30829 and 30830—Continued.**30829—Continued.**

settlers *Steinklee*. Apparently of value as a fodder plant in semiarid regions." (Meyer.)

30830. From near Helenendorf, Caucasus, Russia.

"(No. 757, April 5, 1910.) A perennial alfalfa growing on limey, clayey soil along banks and on ridges; makes very long roots and is apparently drought resistant. Called by local German settlers *Steinklee*. Of value like the preceding number." (Meyer.)

30831 and 30832. PHORMIUM spp.**New Zealand flax.**

From Greendale, Canterbury, New Zealand. Presented by Mr. T. W. Adams. Received May 6, 1911.

Seeds of the following; notes by Mr. Adams:

30831. *PHORMIUM TENAX* Forst.

"Seeds of several varieties that I have growing here, some of them are ornamental and all are good fiber sorts."

30832. *PHORMIUM COOKIANUM* Le Jolis.

"This variety is ornamental in flower and fruit, but poor as a fiber plant."

30833. ENTELEA ARBORESCENS R. BROWN.**Whau.**

From Epsom, Auckland, New Zealand. Presented by Mr. W. Petrie. Received May 6 and 9, 1911.

"This plant is not a hardy one and will barely withstand even slight frosts. It is most plentiful on small coastal islands in the northern part of New Zealand, and at the upper slopes of wooded gullies above the fog line in autumn and winter. The seed grows most readily in my garden; indeed, seedlings are quite a weed." (Petrie.)

"This plant is greedily eaten by cattle and horses, and consequently is becoming rare fast on the mainland, except in comparatively inaccessible situations. It is still plentiful on most of the small outlying islands on the northeast coast of the Auckland district, often exhibiting great luxuriance. On Cuvier Island I measured leaves with petioles 2 feet long, with a blade 1 foot 6 inches in diameter." (Cheeseman, *Manual New Zealand Flora*, p. 83, 1906.)

"This introduction is a tree already tried in California and found to be a very rapid grower. It is made for the purpose of ascertaining the possibility of using the sawdust of the wood, which is very soft and light, as packing for grapes in place of the cork and redwood sawdust commonly used." (S. C. Stuntz.)

30834. ENTELEA ARBORESCENS R. BROWN.**Whau.**

From Auckland, New Zealand. Presented by Mr. E. Clifton, director, Department of Agriculture, Commerce, and Tourists, Wellington, New Zealand. Received May 9, 1911.

See No. 30833 for description.

30835. ANNONA SENEGALENSIS Pers.**Annona.**

From Sacikela, Angola, West Africa. Presented by Mr. Merlin W. Ennis, Benguela, West Africa, via Lisbon. Received May 9, 1911.

"Seeds of a dwarf annona. The plant is about the size of the huckleberry and favors about the same sort of soil and location. The fruit is the size of a small apple, and some have a decidedly pleasant taste. In its wild state the plant is killed down every year by the fires, so I think it could be grown anywhere in the South where the ground does not freeze." (Ennis.)

See No. 25169 for previous introduction.

30836 to 30838.

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received May 1, 1911.

Quoted notes on the following by Dr. Proschowsky:

30836. SOLANUM NIGRUM L.

Nightshade.

"This plant at Nice is in flower and fruit any time of the year."

Seeds.

30837. CITRUS sp.

"*Poire du Commandeur*. An agrume (a citrus fruit) forming a very beautiful tree, with its large pear-shaped fruits, which are of a pleasantly acid flavor and furnish a good lemonade."

Seeds.

30838. OPUNTIA sp.

"This is a fruit of great merit, most agreeable and refreshing, and if not bruised keeps in good state all through the winter."

Cuttings.

30839 to 30841. GLYCINE HISPIDA (Moench.) Maxim. Soy bean.

From Bengal, India. Presented by Mr. E. J. Woodhouse, Department of Agriculture. Received May 9, 1911.

Seeds of the following:

30839. Black.

30841. Chocolate.

30840. Yellow.

"These varieties of soy beans are cultivated to a very small extent on the plains of Bengal, mostly north of the Ganges. They have probably spread outward from the Himalayas, as their vernacular name, *Bhetmas*, is the same as that used by the Bhutias. They have been grown here for two years and breed true; they have been analyzed by Mr. C. S. Taylor, agricultural chemist to the government, who finds that the black-seeded variety yields an average of 38.4 per cent of proteid ($N \times 6.3$), the yellow variety 36.5, and the chocolate 32.6. They are all decumbent plants with small violet flowers and with the upright end of the branches more twining. The black-seeded variety is not so tall growing and has rather smaller bullate leaves, so that it can be easily distinguished in the field from the other two varieties. Plate II, fig. 2, of Bulletin 197, Bureau of Plant Industry, U. S. Department of Agriculture, gives a fair idea of the vegetative stage of the chocolate and yellow seeded varieties.

"The seeds are sown here in June at the break of the monsoon and are harvested in December. The plants die out very easily if water-logged early in growth and yield badly if the moisture fails at the flowering season." (*Woodhouse*.)

30842. HORDEUM VULGARE L.

Hull-less barley.

From Cawnpore, United Provinces, India. Presented by Mr. H. Martin Leake, Land Records and Agriculture. Received May 1, 1911.

30843. SAPOTA ZAPOTILLA (Jacq.) Coville.

Sapodilla.

From Christiansted, St. Croix, Danish West Indies. Presented by Mr. A. J. Blackwood, American consular agent. Received May 10, 1911.

"This pear-shaped variety is considered the finest flavored and best grown in the island." (*Blackwood*.)

Plants.

30844 to 30867.

From Sapporo, Japan. Presented by Prof. T. Minami, Botanic Garden, College of Agriculture, Tohoku Imperial University. Received May 9, 1911.

Seeds of the following:

30844. ACER DIABOLICUM Bl. Maple.

Distribution.—In the islands of Honshu (Hondo) and Kiushu in Japan.

30845. ACER UKURUNDUENSE Trautv. and Meyer. Maple.

Distribution.—The Amur region of Manchuria, the island of Sakhalin, and the islands of Hokushu (Yezo) and Honshu (Hondo) in Japan.

30846. BERBERIS KOREANA Palibin. Barberry.

Distribution.—Known only from the vicinity of Seoul, in Chosen (Korea).

30847. VIBURNUM SARGENTI Koehne.

Distribution.—A shrub resembling *Viburnum opulus* L., found in the vicinity of Peking, China, and also in Japan.

30848. CERCIDIPHYLLUM JAPONICUM Sieb. and Zucc.

Distribution.—A deciduous, bushy tree found in the woods on the mountain slopes in Japan from Hokushu (Yezo) to Kiushu.

30849. LEUCOTHOE GRAYANA Maxim.

Distribution.—An ornamental, low, half-evergreen shrub found on wooded slopes in the islands of Japan.

30850. RHODODENDRON ALBRECHTI Maxim.

Distribution.—In the wooded subalpine valleys of the volcanic mountains of Japan.

30851. VACCINIUM BUERGERI Miq.

Distribution.—In the woods on the mountain slopes of northern and central Japan.

30852. VACCINIUM CILIATUM Thunb.

Distribution.—A much-branched shrub cultivated generally in Japan; probably wild in the province of Bitchu.

30853. VACCINIUM JAPONICUM Miq.

Distribution.—In the woods on the alpine slopes of the mountains in the island of Japan.

30854. VACCINIUM VITIS-IDAEA L.

Cowberry.

30855. AKEBIA LOBATA Decaisne.

See Nos. 24744 and 26424 for previous introductions.

30856. PICEA ABIES (L.) Karst.

Norway spruce.

30857. CRATAEGUS JOZANA Schneider.

Distribution.—In the island of Hokushu (Yezo), in northern Japan.

30858. ERIOBOTRYA JAPONICA (Thunb.) Lindl.

Loquat.

30859. PRUNUS INCISA KURILENSIS (Miyabe) Koidzumi.

Distribution.—A straggling shrub found on exposed hilltops in the Kuril islands.

30860. PRUNUS MAXIMOWICZII Rupr.

Distribution.—Eastern Manchuria, Sakhalin Island, and in Japan.

30861. PRUNUS PSEUDO-CERASUS Lindl.

Flowering cherry.

30844 to 30867—Continued.

30862. RHODOTYPOS KERRIOIDES Sieb. and Zucc.

30863. ROSA MULTIFLORA Thunb.

Rose.

Variety.

30864. PHELLODENDRON SACHALINENSE Sargent.

"Of the three species of this genus established in the Arboretum, *Phellodendron sachalinense* is the handsomest. All the species are natives of eastern Asia and are small trees with pinnate leaves, small clusters of inconspicuous yellow flowers, the male and female flowers being produced on different individuals, and black berrylike fruits. They have bright yellow wood and roots, and all parts of these trees are permeated with a fragrant aromatic oil, which apparently makes them immune from the attacks of insects. *P. sachalinense*, which is a native of Sakhalin and the northern island of Japan, has grown in the Arboretum into a tree about 30 feet high, with a tall, straight trunk and wide-spreading branches, forming a shapely, flat-topped head. The seedlings springing up naturally near the old trees indicate that it is likely to hold its own in New England. The hardiness of this tree, its rapid growth, and the fact that it is not injured by insects suggest that this is a good subject to plant in narrow streets." (*Bulletin of Popular Information*, No. 7, *Arnold Arboretum*, *Harvard University*.)

Distribution.—An ornamental deciduous tree found in the vicinity of Seoul, Chosen (Korea), the southern part of the island of Sakhalin, and in the vicinities of Sapporo and Hakodate in the island of Hokushu (Yezo), Japan.

30865. DIGITALIS LUTEA L.

Foxglove.

Distribution.—In gravelly places in southern Europe, extending from France and Italy eastward to Greece.

30866. ULMUS GLABRA Miller.

Elm.

Variety *japonica*. "This form very much resembles the American elm in habit, foliage, and pubescence, but the flowers and fruits are like those of *U. campestris*." (*Bailey's Cyclopedic of American Horticulture*.)

Distribution.—In woods and copses on the alpine slopes of Japanese mountains.

30867. CLERODENDRUM TRICHOTOMUM Thunb.

"A very handsome, hardy shrub. In the north it kills to the ground but sprouts up if the crown is protected." (*Bailey's Cyclopedic of American Horticulture*.)

Distribution.—In clumps of shrubbery on the margin of woods in the vicinity of Yokosuka in central Japan, and southwestward to Nagasaki on the island of Kiushu.

30868 to 30880.

From Philippine Islands. Received through Mr. C. V. Piper, Bureau of Plant Industry, May 4, 1911.

Seeds of the following; quoted notes by Mr. Piper:

30868. AGATI GRANDIFLORA (L.) Desv.

(*Sesbania grandiflora* Poir.; *Robinia grandiflora* L.)

"*Gawi-gawi*. A very rapid-growing tree 15 to 20 feet high producing abundant flowers and seed. The flowers are fleshy and are eaten as salad by the natives. Used for shade and windbreaks."

30868 to 30880—Continued.

30869. *VITIS BARBATA* Wall.

Grape.

"A native grape."

Distribution.—On the Khasi Hills ascending to an elevation of 3,000 feet, and in the provinces of Assam, Sylhet, Pegu, and Tenasserim in India.

30870. *OPERCULINA TURPETHUM* (L.) Manso.

"A morning-glory with large white flowers and much-inflated pods. Quite ornamental."

Distribution.—Throughout India and extending southeastward through the Malay Archipelago and Polynesia to Australia.

30871. *IPOMOEA* sp.

Morning-glory.

"A morning-glory with rather small yellow flowers."

30872. *IPOMOEA* sp.

Morning-glory.

"A slender native morning-glory."

30873. *MEIBOMIA LASIOCARPA* (Beauv.) Kuntze.

"A species 3 to 5 feet high producing abundant seed in dense clusters."

Distribution.—From the Himalayas, where it ascends to an elevation of 4,000 feet, through India, Ceylon, and the Malay Archipelago to the Philippines, and in Madagascar and tropical Africa.

30874. *MEIBOMIA GANGETICA* (L.) Kuntze.

"A species 3 to 4 feet high, the seed not very abundant."

Distribution.—Throughout the Tropics of the Eastern Hemisphere from Africa and India eastward to China and Australia.

30875. *MEIBOMIA PULCHELLA* (L.) Kuntze.

"A half-shrubby species, 3 to 6 feet high, producing abundant seed."

Distribution.—From the eastern Himalayas in India southwestward to Ceylon, and in China and the Malay Archipelago to the Philippines.

30876. *INDIGOFERA NIGRESCENS* Kurz.

"An annual legume with pink flowers and abundant seed. Grows 1 to 4 feet high. Herbage odorous and not eaten by cattle. To be tested as a green-manure plant in Florida and Biloxi, Miss."

Distribution.—On the slopes of the Khasi Hills in India and in the southwestern part of the province of Yunnan, China.

30877. *INDIGOFERA NIGRESCENS* Kurz.

"A legume 1 to 4 feet high, quite erect. Annual, perhaps of value for green-manure crop."

Distribution.—Same as the preceding number.

30878. *MOGHANIA MACROPHYLLA* (Willd.) Kuntze.

"An erect, stout legume, 3 to 7 feet high, quite leafy but with coarse stems. The pods are produced in dense clusters. Try for forage and green manure."

Distribution.—From the central Himalayas in northern India southwestward to Ceylon, and in Malakka, southern China, and the Malay Archipelago to the Philippines.

30879. *CANAVALI TURGIDUM* Graham.

"A seashore species, climbing the trees to a height of 20 feet. Not eaten by the natives. It is closely related to *Canavali obtusifolium* (C. *lineata*).

30868 to 30880—Continued.**30880.** *SESBAN CANNABINUM* (Retz.) Poir."An annual legume 3 to 9 feet high. Much like *Sesban macrocarpa*."*Distribution.*—In the Tropics of the Eastern Hemisphere from India to the Philippines.**30881. TRIFOLIUM PRATENSE L.****Red clover.**

From England. Presented by Prof. H. T. Güssow, Dominion Botanist, Central Experimental Farm, Department of Agriculture, Ottawa, Canada. Received May 13, 1911.

"Leighton's *Inherited Permanent* red clover. Leighton claims that by careful cultivation he has originated a practically permanent red clover." (*Güssow*.)**30884 and 30885.**

From La Paz, Bolivia. Presented by Mr. Madden Summers, Chargé d'Affaires ad Interim, at the request of Hon. Horace G. Knowles, American Minister. Received May 12, 1911.

Seeds of the following:

30884. *CITRULLUS VULGARIS* Schrad.**Watermelon.****30885.** *CUCUMIS MELO* (L.) All.**Muskmelon.****30886. CITRUS DECUMANA (L.) Murr.****Pomelo.**

From Yachow, China. Presented by Dr. Edgar T. Shields. Received February 23, 1911. Numbered May 15, 1911.

"Very sweet variety." (*Shields*.)

Seed.

30887 to 30889. NICOTIANA spp.**Tobacco.**

From Honduras. Presented by Dr. R. Fritzgartner, Tegucigalpa, Honduras. Received May 12, 1911.

Seeds of the following:

30887. From Piliguin, 4,000 feet altitude.**30888.** From Sorognaro, 4,000 feet altitude.**30889.** From Aurora, 5,000 feet altitude.**30890 and 30891.**

From Diarbekr, Turkey. Presented by Mr. W. W. Masterson, American consul, Kharput, Turkey. Received May 12, 1911.

Seeds of the following:

30890. *CITRULLUS VULGARIS* Schrad.**Watermelon.**

"Large variety."

30891. *CUCUMIS MELO* L.**Muskmelon.**

"Large variety."

30892. SORBUS TORMINALIS (L.) Crantz.

From southern Russia. Presented by Mr. Theo. Kryshstofovich, Russian Government Agricultural Commissioner, St. Louis, Mo. Received May 13, 1911.

"This is a large-sized tree, the most drought resistant of the pear family, in my opinion. Its native habitat is about latitude 47° N., and longitude 37° E. It is

30892—Continued.

almost extinct. Should be tried as a stock for cultivated varieties of pears in dry localities." (*Kryshstofovich.*)

Distribution.—Throughout northern and central Europe eastward to the Caucasus region.

30893 to 30895. SOLANUM spp.

From Jamaica. Presented by Mr. William Harris, director, Public Gardens. Received May 12, 1911.

Seeds of the following:

30893. SOLANUM MAMMOSUM L.

30894. SOLANUM SEAFORTHIANUM Andrews.

30895. SOLANUM TORVUM Swartz.

30896 to 30906.

From Sukhum-Kale, Russia. Presented by Mr. R. B. Marcowitz, director, Jardin Botanique. Received May 15, 1911.

Seeds of the following:

30896. PINUS PINEA L.

Stone pine.

Distribution.—Throughout the Mediterranean region of southern Europe, western Asia, and northern Africa.

See No. 3270 for description.

30897. CUPRESSUS FUNEBRIS Endl.

Funeral cypress.

See No. 23024 for previous introduction.

30898. CUPRESSUS SEMPERVIRENS HORIZONTALIS (Mill.) Gord. Cypress.

30899. LAUROCERASUS OFFICINALIS Roem.

Cherry laurel.

See Nos. 27360 and 27684 for previous introductions.

30900. SPARTEUM JUNCEUM L.

Spanish broom.

See No. 27451 for previous introduction.

30901. (Undetermined.)

30902. PASSIFLORA CAERULEA L.

Passion fruit.

Distribution.—In the provinces of Minas Geraes and Rio Grande do Sul in southern Brazil, and in Uruguay.

30903. PASSIFLORA ACERIFOLIA Hort.

Passion fruit.

See No. 11124 for previous introduction.

30904. CORNUS AUSTRALIS C. A. Meyer.

30905. CYCLAMEN IBERICUM Steven.

Distribution.—The Trans-Caucasian region of southeastern Russia and in northwestern Persia.

30906. DIOSPYROS LOTUS L.

30907. RUBUS MACRAEI A. Gray.

Akala berry.

From Hawaii. Presented by Dr. E. V. Wilcox, Hawaii Agricultural Experiment Station, Honolulu. Received April 17, 1911.

"The fruit attains a diameter of nearly 2 inches, is dark red, very juicy, and although slightly bitter, quite pleasant to the taste." (*Hillebrand.*)

"Would likely improve under cultivation." (*Mueller.*)

Distribution.—On the slopes of the volcanoes in the Hawaiian Islands.

30908. SONCHUS ARBOREUS (Brouss.) DC.

From Canary Islands. Presented by Dr. George V. Perez, Puerto Orotava, Teneriffe. Received May 19, 1911.

"Seed of a rare, herbaceous plant, which, like most of the Canary plants, ought to do well, I should say, in the climate of southern California, which is very much like ours. This is a very striking plant and grows over 6 feet high." (*Perez.*)

30909 and 30910.

From Moscow, Russia. Purchased from Immer & Sons. Received May 13, 1911.
Seeds of the following:

30909. HELIANTHUS ANNUUS L.

Sunflower.

30910. TRIFOLIUM PRATENSE L.

Red clover.

Perm.

30911. COLOCASIA sp.

Taro.

From Cuba. Presented by Mr. Robt. M. Grey, director, Harvard Botanic Station, Belmonte, Cienfuegos, Cuba. Received May 15, 1911.

"Commonly cultivated here for culinary purposes." (*Grey.*)

"The tubers are slightly acid; the flesh cooks white or yellowish white, but it is rather moist and of poor flavor." (*R. A. Young.*)

30912 and 30913.

From Porto Rico. Presented by Dr. John Gifford, Coconut Grove, Fla. Received at the Subtropical Plant Introduction Garden, Miami, Fla., May 8, 1911.

30912. MAGNOLIA SPLENDENS Urban.

"Laurel sabino."

"A first-class timber tree, 50 to 100 feet in height. Olive heartwood, changing after exposure to brownish. Fine grained and aromatic. White, sweet-scented flowers, 2 to 3½ inches in diameter. Leaves with silvery pubescence underneath, although not always pubescent.

"Next to asubo (*Sideroxylon mastichodendron* Jacq.), this is probably the most valuable timber tree on the reserve. Used wherever it is not too scarce and expensive for construction work in the form of beams and boards. Valuable for cabinet work. Still found in patches in the more inaccessible parts of the reserve. Flowers, leaves, and fragrance similar to *Magnolia glauca* of the southern United States. With its light-colored trunk, silvery foliage, and fragrant, showy flowers this tree is worthy of cultivation for ornamental purposes. It is probably called 'laurel' because its leaves are used as a condiment, as is the famous laurel (*Laurus nobilis* L.) of southern Europe, and 'sabino' because of the cedary aroma of its wood." (*Gifford, J. C. The Luquillo Forest Reserve, Porto Rico. Bulletin 54, Bureau of Forestry, U. S. Department of Agriculture, 1905, p. 35.*)

Plants.

30913. THESPESIA GRANDIFLORA DC. (?)

"Maga."

"Rare in the Luquillo region. A thick-foliaged, very beautiful ornamental shade tree with large, pendant, reddish flowers. Yields a first-class, fine, hard, olive-brown timber. Its height varies from 30 to 60 feet." (*Gifford, J. C. The Luquillo Forest Reserve, Porto Rico. Bulletin 54, Bureau of Forestry, U. S. Dept. of Agriculture, p. 36.*)

Cuttings.

30914 to 30920. CERATONIA SILIQUA L.**Carob.**

From Valencia, Spain. Received through Mr. Robert Frazer, jr., American consul, May 10, 1911.

Cuttings of the following, quoted notes by Mr. Frazer:

30914. *Matalafera*. "This is the variety now most extensively cultivated in this region and is very generally used in grafting nursery seedlings and in forming new plantations. The tree is of medium size, with smooth and straight branches, the ramifications of which are thrown out almost at right angles. The leaves are comparatively large and of a very dark-green color, and the fruit, of a deep chestnut shade bordering on black, is large and wide and attains 8 inches in length, but although of excellent appearance, is not considered as good as the red varieties, being lighter in weight and possessing less pulp. The crop of this variety, however, is the most constant and abundant of all carobs known to Valencia agriculturists."

30915. *Casuda*. "This is the most appreciated of all carobs raised in this district. The tree attains gigantic proportions, with knotty, tortuous, and abundant branches and dense foliage, the leaves being of equal size, the smaller predominating. The fruit is long, wide, and thick, of a reddish chestnut color with yellowish tints on both sides and abundant white pulp which renders it appetizing for farm cattle. The great drawback of this variety is uncertainty of crop, which frequently fails altogether or yields an insignificant harvest."

30916. Red-flowered male. "This is a much smaller and more delicate tree than the yellow flowered, very susceptible to cold, but produces a great show of flowers, which, however, frequently fall prematurely before fecundation is possible."

30917. Yellow-flowered male. "This is a vigorous tree of rapid growth which when ingrafted upon a female tree requires frequent pruning to prevent its dominating and overpowering the female branches."

30918. *Roya vera*. "This is a large tree with gnarled branches, of very irregular formation and mostly growing at acute angles; leaves light green, abundant and small. The fruit is light red in color, of medium size, 4 to 6 inches long, and produced all over the tree, trunk and branches, without clustering, seldom more than two or three pods being found united, and the pulp is white and sweet. This tree is a steady, constant, and abundant crop producer and is for this reason preferred by farmers to the other red variety (No. 30915), although the fruit is not quite so fine."

30919. "The hermaphrodite carob with bisexual flowers is something similar in appearance to the *Matalafera*, but its branches are longer, straighter, and smoother, and the smaller ramifications form acute angles with the parent branches instead of the right angles that characterize the *Matalafera*. The fruit, of a light-red color, is long and wide, growing in large clusters, but is of very inferior quality, being woody, fibrous, and tough and adheres so firmly to the trees that it can only be removed by blows with poles or cutting instruments carried by harvesters. The advantages of this tree are that it does not require grafting to fecundate its flowers and that its abundant fruit can not be swept off by high winds before maturity, as so frequently happens to other varieties. The fruit, however, is so rough and unpalatable that horses and mules accustomed to other carobs reject the hermaphrodites altogether and refuse to eat them. For this reason they are usually exported to Great Britain, France, and Italy, and are generally steeped in sea water

30914 to 30920—Continued.**30919—Continued.**

before or during the voyage, a process which, by partly decomposing the woody fiber of the pods and imparting a salt flavor, is said to render them more palatable and digestible."

30920. The name of this variety was indistinct on the label, but is apparently *Roya vera*.

30921 to 30955.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, May 11, 1911.

Cuttings of the following:

30921. POPULUS PRUINOSA Schrenk.**Desert poplar.**

From near Kara Kulja, Chinese Turkestan. "(No. 932, February 14, 1911.) A species of desert poplar, called *Thal Tograk*, occurring in big groves in sandy and alkali deserts mostly intermixed with *Populus euphratica*, to which it bears great resemblance in general habits. The leaves are nearly always kidney shaped, although round-oblong ones are often seen. The young twigs and leaves, however, are always tomentose. The wood is used in the same way as that of *P. euphratica*, except that as this species in general does not grow so large one can not manufacture troughs or barrels from it; it is said, however, that this wood is harder and more lasting. This poplar will be able to stand more intense heat and drought, but slightly less cold than *P. euphratica*. (Meyer.)

30922. POPULUS BALSAMIFERA LAURIFOLIA (Ledeb.) Wesm.**Poplar.**

From Yengi-Malah, Tien Shan Range, Chinese Turkestan. Altitude 7,950 feet. "(No. 933, March 5, 1911.) A species of wild poplar, called *Tagh terek*, growing into a small or medium-sized tree. Occurs on stony, sterile, and desolate places, mostly in the vicinity of mountain streams. Leaves somewhat leathery and varying considerably on different specimens. Bark glossy, grayish white, making a grove of these trees a very cheerful object in an otherwise dull winter landscape. Recommended as an ornamental park tree, also as a fuel supplier in cold and bleak regions. Suited especially to cool mountain climates." (Meyer.)

30923. SALIX sp.**Willow.**

From Yengi-Malah, Tien Shan Range, Chinese Turkestan. Altitude 7,950 feet. "(No. 934, March 5, 1911.) A willow called *Thal*; occurs along mountain streams in stony and rocky situations. Mostly seen as a tall shrub, but also grows into a small tree. Bark of young twigs yellow in color. The branches have a slight drooping habit. Apparently very resistant to cold, drought, and adverse conditions. Of value as a small garden and park tree in the cooler sections of the United States." (Meyer.)

30924. SALIX sp.**Willow.**

From Kailik, Tien Shan Range, Chinese Turkestan. Altitude 8,400 feet. "(No. 935, March 6, 1911.) A willow occurring on sandy and stony places. Grows into a tall shrub or small tree. Bark of old branches white, of young twigs red or yellowish red. Of value like the preceding number." (Meyer.)

30925. SALIX sp.**Willow.**

From near Kailik, Tien Shan Range, Chinese Turkestan. Altitude 8,200 feet. "(No. 937, March 6, 1911.) A small, shrubby willow, found on sandy flats. This willow has very long slender branches, which are remarkably

30921 to 30955—Continued.**30925—Continued.**

pliable and furnish an excellent tying material. To be experimented with as a source of supply of garden-tying material and as a possible basketry willow in the cooler regions of the United States." (*Meyer.*)

30926. SALIX sp.**Willow.**

From near Kayirlik, Tien Shan Range, Chinese Turkestan. Altitude over 10,000 feet. "(No. 938, March 9, 1911.) A willow occurring on dry and stony places, grows into a good-sized, spreading bush of well-rounded shape. Suitable for use as a lining shrub along winding roads and also on flat expanses along watercourses. Will do especially well in cool mountain regions." (*Meyer.*)

30927. SALIX sp.**Willow.**

From the valley of the Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude 3,700 feet. "(No. 939, March 18, 1911.) This willow grows into a small-sized tree with a broad, round head, and looks as if it had been trimmed. The branches are of a pale greenish yellow color. Quite ornamental. Found on moist, peaty soil. Of value as a small park and garden tree in the northern sections of the United States." (*Meyer.*)

30928. SALIX sp.**Willow.**

From near Kayirlik, Tien Shan Range, Chinese Turkestan. Altitude over 10,000 feet. "(No. 941, March 9, 1911.) A willow occurring in stony débris at high altitudes. On exposed cold places it reaches only the size of a shrub, but on sheltered localities it grows into a small tree. Bark of young branches yellow in color. Of value like the preceding number." (*Meyer.*)

30929. SALIX sp.**Willow.**

From near Kayirlik, Tien Shan Range, Chinese Turkestan. Altitude over 10,000 feet. "(No. 942, March 9, 1911.) Small bushy willow, with silvery, tomentose leaves, found in rocky situations. Of value for rockery work and as a border shrub in cold, bleak regions." (*Meyer.*)

30930. TAMARIX sp.**Tamarisk.**

From near Lango, Chinese Turkestan. "(No. 943, February 13, 1911.) A tamarisk found in immense quantities on sandy and alkaline places in the desert, it is called *Kara yulrun*, and is mostly seen as a shrub 4 to 6 feet tall, but in favorable situations grows into a small tree 10 to 15 feet high. The fallen leaves and twigs intermix with the moving sand and dust, enabling this plant to build mounds often of considerable height. The old trunks in this way are buried, but new branches shoot up all the time and increase the area occupied by such mounds. The wood is an excellent fuel of great heating qualities and is extensively used. Reckless cutting and the grubbing out of roots have denuded large areas of desert lands, which formerly were covered with these tamarisk bushes and which often become moving wastes again. This tamarisk will probably be found of great value in the alkaline and desert regions of the United States as a cover plant of waste areas, as a sand binder, and as a fuel supplier. If possible, the ground water should not be too far from the surface, otherwise the plants will make very little growth." (*Meyer.*)

30931. TAMARIX sp.**Tamarisk.**

From near Tumchuk, Chinese Turkestan. "(No. 944, February 18, 1911.) A tamarisk of very spreading growth, making long, slender branches of rose-red color. Of value like the preceding number, also as an ornamental shrub in desert regions." (*Meyer.*)

30921 to 30955—Continued.**30932. TAMARIX sp.****Tamarisk.**

From near Schul-Kuduk, Chinese Turkestan. "(No. 945, February 22, 1911.) A small-growing tamarisk, found in a sandy, alkali desert. Branches slender and of a pale-red color, growing 3 to 5 feet in length; these twigs are used by the native population for making strong brooms and baskets. The plants stand yearly cutting off to the ground. Of value as a broom and basketry material in the arid and semiarid regions of the United States." (*Meyer.*)

30933. TAMARIX sp.**Tamarisk.**

From near Yamatu, Tien Shan Range, Chinese Turkestan. "(No. 946, March 21, 1911.) A tamarisk found on dry alkaline places at an altitude of 2,400 feet, growing into a shrub 4 to 6 feet high. Twigs of an attractive orange-brown color. Of value as an ornamental shrub in cold and dry regions." (*Meyer.*)

30934. SPIRAEA sp.

From Kara-Tugai, Tekes Valley, Tien Shan Range, Chinese Turkestan. Altitude, 3,900 feet. "(No. 947, March 16, 1911.) A shrubby spirea, occurring on dry plains in rather heavy soils. Grows from 3 to 5 feet tall, and bears apparently white flowers. Of value possibly as a garden and park shrub in the northern sections of the United States." (*Meyer.*)

30935. SPIRAEA sp.

From near Schutte, Tien Shan Range, Chinese Turkestan. Altitude over 7,000 feet. "(No. 948, March 10, 1911.) A spirea found on rocky mountain sides. Has tomentose branches, and grows from 3 to 5 feet in height. Possibly of value like the preceding number." (*Meyer.*)

30936. LONICERA sp.**Honeysuckle.**

From the valley of the Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude of 3,700 feet. "(No. 952, March 18, 1911.) A shrubby honeysuckle, found in copses on peaty and on rocky soil. Grows 4 to 6 feet in height. The young branches are of a pale-yellow or white color and are attractive looking in winter. Of value like the preceding numbers." (*Meyer.*)

30937. LONICERA sp.**Honeysuckle.**

From near Yengi-Malah, Tien Shan Range, Chinese Turkestan. Altitude of 8,000 feet. "(No. 953, March 5, 1911.) A shrubby honeysuckle, of tall, fastigate growth. A mutation, the only one seen among thousands of normally growing bushes. Of value as a shrub of rigid outlines along pathways, also as a background for flowering plants in cemeteries and formal gardens. To be tested with special care." (*Meyer.*)

30938. CARAGANA sp.

From Kurgan, Tien Shan Range, Chinese Turkestan. Altitude of 7,700 feet. "(No. 955, March 5, 1911.) A small, spiny Caragana, found on dry, stony, and sterile places. Grows from 3 to 6 feet in height, and has peculiar small adpressed side branches. A botanical curiosity. Of use as a small ornamental shrub in very dry places." (*Meyer.*)

30939. REAUMURIA sp.

From near Kailik, Tien Shan Range, Chinese Turkestan. Altitude of 8,200 feet. "(No. 958, March 6, 1911.) A tall-growing shrub, adapted to sandy and rocky situations. Of slight sand-binding qualities and for this reason possibly of value for the purpose of fixing moving sandy wastes in the northern sections of the United States and as an ornamental shrub for sterile situations." (*Meyer.*)

30921 to 30955—Continued.

30940. *ELAEAGNUS ANGUSTIFOLIA* L.

Oleaster.

From near Yamatu, Tien Shan Range, Chinese Turkestan. Altitude of 2,500 feet. "(No. 959, March 21, 1911.) A variety of wild oleaster having a beautiful shining, chocolate-brown bark. Found on a sandy waste along the Tekes River. Grows into a tall shrub or a small tree. Of decided ornamental value for parks and gardens in the cooler sections of the United States." (Meyer.)

30941. *ULMUS* sp.

Elm.

From Aksu, Chinese Turkestan. "(No. 962, February 25, 1911.) A cultivated variety of elm called *Seda*, forming a very dense, well-rounded head. Grows to great age and becomes through its dense black mass of branches a feature of the landscape in Turkestan. Recommended as a peculiar formal shade tree for cemeteries, also as an ornamental tree of stiff outlines in front of buildings of classical designs. A variety sent under No. 30364, which may prove to be the same as this." (Meyer.)

30942. *FRAXINUS* sp.

Ash.

From near Yamatu, Tien Shan Range, Chinese Turkestan. Altitude of 2,500 feet. "(No. 963, March 21, 1911.) An ash growing into a tall shrub or a medium-sized tree; occurs on saline, moist places. Of value possibly as an ornamental tree in the alkaline northern sections of the United States." (Meyer.)

30943. *RIBES* sp.

Currant.

From near Idin-Kul, Tien Shan Range, Chinese Turkestan. Altitude of 8,200 feet. "(No. 964, March 10, 1911.) A wild currant, found on rocky mountain slopes in the shade of spruce trees. Of value possibly for hybridization work." (Meyer.)

30944. *RIBES* sp.

Currant.

From near Idin-Kul, Tien Shan Range, Chinese Turkestan. Altitude of 8,200 feet. "(No. 965, March 10, 1911.) A wild currant, found on rocky mountain slopes in the shade of spruce trees. Of very tall growth, 6 to 10 feet. Young shoots covered with prickles. Possibly of value like the preceding number; also as a hardy ornamental park shrub." (Meyer.)

30945. *RIBES* sp.

Gooseberry.

From the valley of the Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude of 3,700 feet. "(No. 966, March 19, 1911.) A rare species of wild gooseberry, found on shady places amidst various scrub. Young branches rather spiny. Of value possibly like preceding number." (Meyer.)

30946. *MALUS* sp.

Apple.

From Kurgan, Tien Shan Range, Chinese Turkestan. Altitude of 7,700 feet. "(No. 968, March 5, 1911.) A wild apple, which grows into a small-sized tree. Young branches very dark red in color. This form apparently stands great drought and severe cold and may be of value in hybridization work to create hardier strains of apples suitable for the coldest sections of the United States. May also be tried as a dwarfing stock in cold sections." (Meyer.)

30947. *MALUS* sp.

Apple.

From near Kitchik Djighilan, Tien Shan Range, Chinese Turkestan. Altitude of 4,100 feet. "(No. 969, March 17, 1911.) A wild apple of somewhat bushy growth, found on the northern slopes of otherwise barren mountains. Bears small round fruits of red color and subacid taste, having long peduncles. Calyx persistent. Leaves somewhat tomentose and smaller than those of

30921 to 30955—Continued.

30947—Continued.

cultivated varieties. Twigs long and strong. The bark of the main trunk and of the older branches peels off in patches and gives the tree a hardy-looking appearance. At the time of my visit (March 17) the trees were still standing in 2 feet of hard-frozen snow, and this fact, together with the decided semiarid character of the locality, the short, hot, and dry summers, and the long, cold winters, should make this species of apple a valuable one as a hybridization factor in the creation of hardier types of apples adapted to the upper Mississippi Valley region and the localities west of it." (*Meyer.*)

30948. *MALUS* sp.

Apple.

From near Kitchik Djighilan, Tien Shan Range, Chinese Turkestan. Altitude of 4,100 feet. "(No. 970, March 17, 1911.) A variety of wild apple. The tree attains a height of 25 feet, has slender branches, but a good-sized trunk. Its fruits are apparently small. Seems to be much hardier than our cultivated apples. Otherwise the same remarks apply to it as to the preceding." (*Meyer.*)

30949. *MALUS* sp.

Apple.

From the valley of the Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude of 3,700 feet. "(No. 971, March 18, 1911.) The valley of the Chong Djighilan River and its small tributaries is one vast wild apple and apricot garden, and these wild trees vary in all possible ways. The quality and size of the fruits of the wild apples exhibit great variations, ranging from small, sour, hard fruits up to medium-sized apples of a very fair taste. The local people collect the best varieties in autumn, slice them, and keep them dried for winter use; while bears and wild hogs come down from the higher mountains especially to enjoy both the apples and the apricots in late summer and autumn. These wild apples are apparently much slower growers than those we have now in cultivation, but they make up for it in all-around hardness, and one may expect to obtain from them strains able to stand much greater cold than most of the varieties that have been developed from the apples coming originally from moist and mild western Europe." (*Meyer.*)

30950. *MALUS SYLVESTRIS* Miller.

Apple.

From Aksu, Chinese Turkestan. "(No. 973, February 25, 1911.) A variety of cultivated apple called *Kabak alma*. It is said that the trees have a drooping, spreading habit and bear abundantly only every other year, also that the fruit is of oblong shape, white color, and ripens in summer. Of possible value in those sections of the United States where the summers are hot and dry, but the winters moderately cold, and where ordinary apples do not succeed." (*Meyer.*)

30951. *MALUS SYLVESTRIS* Miller.

Apple.

From Aksu, Chinese Turkestan. "(No. 974, February 25, 1911.) A variety of cultivated apple called *Kizlik alma*. Said to be a very good winter apple. Shape oblong, of medium size, red on one side and greenish white on the other. Ripens in November. Of good keeping qualities and a prolific bearer. To be tested like the preceding number." (*Meyer.*)

30952. *PRUNUS ARMENIACA* L.

Apricot.

From near Kitchik Djighilan, Tien Shan Range, Chinese Turkestan. Altitude of 4,100 feet. "(No. 976, March 17, 1911.) A variety of wild apricot, found between clumps of wild apples on the north side of a barren mountain, the trees standing in 2 feet of hard-frozen snow at the time of my visit. Of possible value in the creation of a race of late-blooming, hardy apricots for the northern sections of the United States." (*Meyer.*)

30921 to 30955—Continued.

30953. ASPARAGUS sp.

Asparagus.

From Tchoa, Tekes Valley, Tien Shan Range, Chinese Turkestan. Altitude of 4,300 feet. "(No. 978, March 15, 1911.) A wild asparagus of climbing habits, growing from 8 to 15 feet in length. Found between Berberis bushes. The young sprouts are eaten as a spring vegetable. Of possible value as an ornamental plant in northern regions, and as cut greens for decorative work." (Meyer.)

30954. MEDICAGO sp.

Alfalfa.

From near Tuwan, Tien Shan Range, Chinese Turkestan. "(No. 979, March 14, 1911.) A wild alfalfa of erect growth, bearing yellow flowers and short flat pods. Found on clayey and peaty hill slopes at altitudes between 6,000 and 7,000 feet. Stands great cold in winter and drought in summer and is eagerly eaten by horses, cattle, and sheep. Of value, probably, as a forage plant in sections of the United States where the ordinary alfalfa is winterkilled. Native name *Yau beda*, in Turki, and *Serlik beda*, in Kalmuck." (Meyer.)

30955. MEDICAGO FALCATA L.

From the valley of the Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude of 3,700 feet. "(No. 980, March 18, 1911.) A wild alfalfa of semierect growth having yellow flowers and short, slightly curved pods; occurring on abandoned wheat fields and along the edge of cultivated lands; seems to like lime in the soil. Is considered by the local population superior in fodder value to the cultivated alfalfa. The hay of *Medicago falcata* tastes aromatically sweet, while that of *M. sativa* has a slightly saline flavor. Of value possibly as a fodder plant in elevated regions. Native names *Tagh beda*, in Turki, and *San Musu*, in Dzungan, both meaning wild or mountain lucern." (Meyer.)

30956 to 30962.

From Port Louis, Mauritius. Presented by Mr. Gabriel Regnard. Received May 12 and 15, 1911.

Seeds of the following:

30956. COMBRETUM COCCINEUM (Sonnerat) Lam.

Distribution.—A climbing shrub, found in Madagascar and the island of Mauritius.

30957. MIMUSOPS ELENGI L.

Distribution.—A tree attaining a height of 50 feet, common in the Dekkan, India, and the Malay Peninsula; generally cultivated in the Tropics.

30958. PITHECOLOBIUM SAMAN (Jacq.) Benth.

Saman.

See No. 2724 for description.

Distribution.—Nicaragua and the northern part of South America.

30959. PONGAM PINNATA (L.) W. F. Wight.

See No. 27570 for previous introduction.

30960. TOLUIFERA sp.

30961. NAUCLEA ORIENTALIS L.

"A very large tree from Australia." (Regnard.)

Distribution.—A tree found in the Malay Peninsula and eastward through the Malay Archipelago and Polynesia to northern Australia.

30956 to 30962—Continued.**30962.** SEMECARPUS ANACARDIUM L. f.**Marking nut.**

Distribution.—A moderate-sized deciduous tree found growing in woods from the tropical slopes of the Himalayas in Sikkim throughout the hotter parts of India and extending through the eastern islands of the Malay Archipelago to northern Australia.

30963 to 30967.

From Lamac, Philippine Islands. Received through Mr. C. V. Piper, Bureau of Plant Industry, May 17, 1911.

Seeds of the following; quoted notes by Mr. Piper:

30963. VIGNA PILOSA (Klein) Baker.

"A very vigorous annual (?) legume growing about as large as the Lyon bean, but producing very few pods."

30964. PUERARIA PHASEOLOIDES (Roxb.) Benth.

"A common vine in forest thickets. To be tried in Mississippi and Florida."

30965 and 30966. SYNTERISMA CILIARIS (Retz.) Schrad.

"A common species here. These two may be identical and the same as a form already in the United States. To be tried at Biloxi, Miss., and Arlington Farm, Va."

Distribution.—A form of *Syntherisma sanguinalis* (L.) Dulac found in the Tropics of the Eastern Hemisphere.

30967. CANAVALI sp.

"Native. Mr. Merrill considers it the wild form of *Canavali ensiforme*, a determination which I doubt. Note the pubescence on the pods. Common in thickets."

30968. CERATONIA SILIQUA L.**Carob.**

From Algeria. Presented by Dr. L. Trabut, Mustapha Alger, Algeria. Received May 18, 1911.

Hermaphrodite. See No. 30919 for description of similar variety.

30969. POPULUS TREMULA L.**Aspen.**

From St. Petersburg, Russia. Presented by Mr. W. W. Rockhill, American ambassador. Received May 19, 1911.

See No. 29098 for description.

30970. GARCINIA DULCIS (Roxb.) Kurz.

From Singapore, Straits Settlements. Presented by Dr. H. N. Ridley, director, Botanic Gardens. Received May 19, 1911.

Introduced for testing as a stock for the mangosteen, which has a notably poor root system.

Distribution.—A medium-sized tree found in the islands of the Malay Archipelago.

30971 and 30972. MANGIFERA INDICA L.**Mango.**

From San Jose, Costa Rica. Presented by Mr. C. Wercklé, Museo Nacional. Received May 15, 1911.

Cuttings of the following:

30971. Rosa.**30972.** Scarlet.

30973. VITIS VINIFERA L.**Grape.**

From Tiflis, Caucasus, Russia. Presented by Mr. A. Rolloff, Botanical Garden.
Received May 19, 1911.

"Schaani."

30974. LUPINUS sp.**Blue lupine.**

From the eastern slope of Chiriqui Volcano, Panama, about 9,970 feet altitude.
Collected by Mr. Wm. R. Maxon, assistant curator, Division of Plants, Smithsonian Institution. Received May 23, 1911.

"I do not know that this species is of any particular value." (*Maxon.*)

30975 to 31093.

From St. Petersburg, Russia. Presented by the director, Imperial Botanic Garden. Received May 20, 1911.

Seeds of the following:

30975. AMYGDALUS BUCARICA Korsh.

Distribution.—On the slopes of the mountains in the province of Bokhara in southern Turkestan.

30976. ASPARAGUS OFFICINALIS L.**Asparagus.****30977. BETA PATELLARIS Moq.**

Distribution.—A biennial plant growing in the sand on the shores of the Canary Islands.

30978. BETA VULGARIS L.**Beet.****30979. BETULA sp.****Birch.****30980. COTONEASTER TOMENTOSA (Ait.) Lindl.**

See No. 28213 for previous introduction.

30981. CRATAEGUS CRENULATA Roxb.**Hawthorn.**

See No. 28845 for previous introduction.

30982. PHOTINIA GLABRA (Thunb.) Maxim.

Distribution.—A shrub found in the vicinity of Yokohama in Japan, and near Ningpo in the province of Chekiang, and Amoy in Fukien, China.

30983. EUONYMUS NANUS Bieb.

A handsome shrub for rockeries and rocky slopes.

Distribution.—Southern Asia, extending from the Caucasus region eastward through Turkestan and Mongolia to the provinces of Kansu and Shensi in China.

30984. IRIS HALOPHILA Pallas.**Iris.****30985. IRIS SPURIA NOTHA (Bieb.) Baker.****Iris.**

Distribution.—From the Caucasus region eastward to Kashmir in India.

30986. KNAUTIA ARVENSIS (L.) Coulter.

Distribution.—Throughout Europe, especially in the northern and central parts, and eastward to the Ural Mountains in Siberia.

30987. LALLEMANTIA IBERICA (Bieb.) Fisch. and Meyer.

See No. 29932 for previous introduction.

30988. LONICERA CAERULEA L.**Honeysuckle.**

Distribution.—A much-branched shrub found in Europe and Asia, extending southward to the Alps and the Pyrenees, and eastward to Japan.

30975 to 31093—Continued.

30989. *LONICERA HISPIDA* Pallas.

Honeysuckle.

Distribution.—An erect shrub found in central Asia on the slopes of the Himalayas and the Altai Mountains at an elevation of 9,000 to 15,000 feet.

30990. *LONICERA MORROWI* A. Gray.

Honeysuckle.

Distribution.—On the slopes of the mountains in the island of Hokushu (Yezo), Japan.

30991. *MERTENSIA SIBIRICA* (L.) Don.

Distribution.—Northeastern Siberia, extending from the valley of the Lena River eastward to Kamchatka.

30992. *MEDICAGO HISPIDA ACULEATA* Urban.

Distribution.—Southern France and Spain, and in northern Africa.

30993. *CIRCINNUS CIRCINATUS NUMMULARIUS* (DC.) Skeels.

(*Medicago nummularia* DC., *Catalogus Plantarum Horti Botanici Monspeliensis*, 1813, p. 124.)

This Egyptian leguminous plant was first given a specific name, *Medicago nummularia*, by De Candolle, who, in describing it, cited Gaertner's figure of *Medicago circinata* (De Fructibus et Seminibus Plantarum, 1791, vol. 2, p. 348, pl. 155) and Willdenow's *M. circinata* β . (Species Plantarum, 1801, vol. 3, p. 1404.) *Medicago circinata* L. has a reniform pod with a dentate margin. In *M. nummularia* Willd., the margin of the pod is entire. These plants are generally known as *Hymenocarpus circinatus* and *H. nummularius*. The generic name *Hymenocarpus* was published by Savi in 1798 (Flora Pisana, vol. 2, p. 205), with one species, *H. circinata*, based on *Medicago circinata* L. However, in 1787 Medicus had already published the generic name *Circinnus* (Vorlesungen der Kurpfälzischen Physikalisch-Oekonomischen Gesellschaft, vol. 2, p. 384), also based on *Medicago circinata* L. While this book is not obtainable, the publication is verified by the Index Kewensis, and Medicus again published the name in 1789 in Philosophische Botanik, vol. 1, p. 208, where he referred to the former publication and again cited *Medicago circinata* L. Not considering our form to be distinct enough to be given specific rank, it is here placed under *Circinnus circinatus* as a subspecies.

Circinnus circinatus nummularius was first found in cultivated fields in Egypt and is also known to grow in the southern part of Persia.

30994. *MEDICAGO RIGIDULA* (L.) Desr.30995. *MEDICAGO HISPIDA CONFINIS* (Koch) Burnat.30996. *MEDICAGO HISPIDA RETICULATA* (Benth.) Urban.

Distribution.—Southern France, Spain, and Portugal in southwestern Europe, and in northern Africa.

30997. *MEDICAGO SCUTELLATA* (L.) Miller.30998. *MEDICAGO HISPIDA APICULATA* (Willd.) Urban.

Distribution.—The western part of Europe, extending from the British Isles southward through France to Spain and Italy, and in northern Africa.

30999. *MEDICAGO LACINIATA* (L.) Miller.

Distribution.—The countries bordering on the Mediterranean from Spain and southern France eastward through Italy and Asia Minor to Persia, and in northern Africa and the Canary Islands.

31000. *MEDICAGO SATIVA* L.

Alfalfa.

30975 to 31093—Continued.

31001. *MEDICAGO RIGIDULA CINERASCENS* (Jord.) R. and F.

Distribution.—The countries bordering on the Mediterranean from Spain to Syria, and in northern Africa.

31002. *MEDICAGO HISPIDA APICULATA* (Willd.) Urban.

31003. *MEDICAGO HISPIDA TERESELLUM* (Willd.) Urban.

31004. *MEDICAGO MINIMA* (L.) Grubb.

31005. *MEDICAGO FALCATA* L.

31006. *MEDICAGO MUREX SORRENTINI* (Tin.) Urban.

Distribution.—In the island of Sicily and in Italy.

31007. *MEDICAGO SOLEIROLII* Duby.

Distribution.—In the island of Corsica and in northern Africa.

31008. *TRIGONELLA ARCUATA* Meyer.

Distribution.—In dry places in Armenia and in northern Persia.

31009. *MEDICAGO PROSTRATA* Jacq.

Distribution.—Southern Europe, extending from Italy and Sicily eastward through the Balkan Peninsula to the southwestern part of Russia.

31010. *MEDICAGO HISPIDA* Gaertn.

31011. *MEDICAGO HISPIDA RETICULATA* (Benth.) Urban.

31012. *MEDICAGO HISPIDA TERESELLUM* (Willd.) Urban.

31013 and 31014. *MEDICAGO LUPULINA* L.

31015. *MEDICAGO HISPIDA APICULATA* (Willd.) Urban.

31016. *MEDICAGO OBSCURA HELIX* (Willd.) Urban.

Distribution.—The countries at the western end of the Mediterranean, extending from Spain and Italy through the islands and northern Africa.

31017. *MEDICAGO HISPIDA* Gaertn.

31018. *MEDICAGO HISPIDA ACULEATA* Urban.

31019. *MEDICAGO CILIARIS* (L.) All.

31020. *TRIGONELLA OVALIS* Boiss.

31021. *MEDICAGO ECHINUS* DC.

Distribution.—In fields and cultivated places in the provinces of France bordering on the Mediterranean.

31022. *MEDICAGO HISPIDA CONFINIS* (Koch.) Burnat.

31023. *MEDICAGO HISPIDA TERESELLUM* (Willd.) Urban.

31024. *MEDICAGO HISPIDA ACULEATA* Urban.

31025. *MECONOPSIS SIMPLICIFOLIA* (Don) Hook. f. and Thomson.

Introduced with others of the genus for trial in the hope of finding a thoroughly hardy blue poppy and also for possible use in breeding work with the hardier poppies already in cultivation.

Distribution.—A perennial herb with large blue-purple flowers, found on the subalpine slopes of the Himalayas at an elevation of 12,000 to 14,000 feet, in Nepal and Sikkim in northern India.

31026. *PRIMULA DENTICULATA* Smith.

Primrose.

A hardy plant usually treated as a rockwork subject. Blooms in earliest spring.

30975 to 31093—Continued.

31026—Continued.

Distribution.—In damp places on slopes of the Himalayas at an altitude of 7,000 to 13,000 feet, from Bhutan to Kashmir, and at an altitude of 5,000 feet in the Khasi Hills, India; also in Afghanistan.

31027. *HYPERICUM PATULUM* Thunb.

See No. 1710 for previous introduction.

Distribution.—Southeastern Asia, extending from the Himalayan region of northern India eastward through China to central and southern Japan.

31028 to 31032. *MALUS BACCATA* (L.) Moench.

31028. Variety *microcarpa*.

31031. Variety *aurantiaca*.

31029. Variety *costata*.

31032.

31030. Variety *edulis*.

31033. *SORBUS ARIA* (L.) Crantz.

Variety *latifolia*.

31034. *ROSA FERRUGINEA* Villars.

Rose.

See No. 30263 for previous introduction.

31035. *RHEUM PALMATUM TANGUTICUM* Maxim.

Rhubarb.

See No. 21761 for previous introduction.

31036. *RHEUM SPICIFORME* Royle.

Rhubarb.

Distribution.—On the dry slopes of the Himalayas, at an altitude of 9,000 to 16,000 feet, from Afghanistan to Tibet.

31037. *RHEUM AUSTRALE* Don.

Rhubarb.

See No. 21763 for previous introduction.

31038. *RHEUM PALMATUM* L.

Rhubarb.

Variety *corallinum*.

31039. *RHEUM PALMATUM* L.

Rhubarb.

Red-flowered variety.

31040. *RHEUM RHAPONTICUM* L.

Rhubarb.

See No. 21758 and 21760 for previous introduction.

31041. *RHEUM FRANZENBACHII* Muentzer.

Distribution.—In the mountain valleys of the province of Shensi, China.

31042. *RHEUM MOORCROFTIANUM* Royle.

Rhubarb.

See No. 21766 for previous introduction.

31043. *TRIFOLIUM SCABRUM* L.

Clover.

31044. *TRIFOLIUM CHERLERI* Jusl.

Clover.

Distribution.—The countries bordering on the Mediterranean from Spain to Syria, and in northern Africa.

31045. *TRIFOLIUM PANNONICUM* Jacq.

Hungarian clover.

31046. *TRIFOLIUM MEDIUM* Huds.

Zigzag clover.

31047. *TRIFOLIUM SPUMOSUM* L.

Clover.

31048 and 31049. *TRIFOLIUM AGRARIUM* L.

Golden clover.

31050. *TRIFOLIUM CERNUUM* Brot.

Clover.

Distribution.—In the vicinity of Cintra in Portugal, and Spain.

30975 to 31093—Continued.

31051. TRIFOLIUM STRIATUM L.

Clover.

Distribution.—Western and southern Europe, extending from Norway and Sweden southward to Spain and eastward to Asia Minor and the Caucasus region, and in northern Africa.

31052. TRIFOLIUM INCARNATUM L.

Crimson clover.

31053. TRIFOLIUM RECLINATUM Waldst. and Kit.

Distribution.—In grassy places in Hungary, Servia, and Macedonia.

31054. TRIFOLIUM TUMENS Stev.

Clover.

Distribution.—In grassy fields on the slopes of the mountains in the Trans-Caucasian region of Russia and in northern Persia.

31055. TRIFOLIUM ALEXANDRINUM L.

Berseem.

31056. TRIFOLIUM PRATENSE L.

Red clover.

31057. TRIFOLIUM LAPPACEUM L.

Clover.

31058. TRIGONELLA FOENUM-GRÆCUM L.

Fenugreek.

31059. TRIGONELLA PROCUMBENS (Bess.) Reichenb.

Distribution.—Southeastern Europe, extending from the Balkans eastward through southern Russia and the Caucasus region to Asia Minor.

31060. TRIGONELLA CORNICULATA L.

31061. TRIGONELLA CRETICA Boiss.

31062. TRIGONELLA POLYCEPATA L.

31063. TRIGONELLA POLYCEPATA L.

Variety *dentata*.

31064. TRIGONELLA CAERULEA (L.) Ser.

Variety *connata*.

31065. TRIGONELLA CALLICERAS Fisch.

31066. TRIGONELLA GLADIATA Stev.

31067. TRIGONELLA SPINOSA L.

Distribution.—In grassy places in the island of Crete, and along the shores of the southern part of Asia Minor and Syria and Palestine.

31068. TRIGONELLEA CAERULEA (L.) Ser.

31069. MEDICAGO RADIATA L.

31070. TILIA RUBRA BEGONIFOLIA (Stev.) Schneider.

Distribution.—In the Crimean Peninsula and the Caucasus region of southeastern Russia, Armenia, and northern Persia.

31071. AGROPYRON SIBIRICUM (Willd.) Beauv.

31072. TROLIUS LEDEBOURII Reichenb.

Distribution.—A hardy, herbaceous perennial found on the margins of woods or in damp open fields near streams throughout Manchuria.

31073. VICIA SATIVA L.

Spring vetch.

31074. VICIA VILLOSA Roth.

Hairy vetch.

31075. VICIA SATIVA LEUCOSPERMA (Moench) Ser.

31076. VICIA PSEUDOCRACCA Bertol.

31077. VICIA CORNIGERA Chaub.

Distribution.—A form apparently closely related to *Vicia sativa*, found in the vicinity of Agen, France.

30975 to 31093—Continued.**31078.** *VICIA HIRSUTA* (L.) S. F. Gray.**31079.** *VICIA MELANOPS* Sibth. and Smith.*Distribution.*—The central and southern part of Italy, the islands of Sicily, and eastward to Greece.**31080.** *VICIA PICTA* Fisch. and Meyer.*Distribution.*—In copses from Dalmatia eastward through southern Russia to Siberia.**31081.** *VICIA SATIVA* L.

Spring vetch.

31082. *VICIA SATIVA OBOVATA* Ser.**31083.** *VICIA ANGUSTIFOLIA* Grufberg.**31084.** *VICIA SATIVA LEUCOSPERMA* (Moench) Ser.**31085.** *VICIA SYLVATICA* L.*Distribution.*—Western and southern Europe, extending from Norway, Sweden, and the British Isles southward to southern France, Italy, Corsica, and Sardinia, and eastward through Serbia and Roumania to southern Russia.**31086 to 31088.** *VICIA* spp.**31089.** *VICIA ONOBRYCHIOIDES* L.*Distribution.*—Southern France, Spain, and eastward through Italy to Greece; also in northern Africa.**31090.** *VICIA ANGUSTIFOLIA* Grufberg.**31091.** *VICIA DISPERMA* DC.**31092.** *VICIA MICHAUXII* Spreng.*Distribution.*—Along cultivated fields in Mesopotamia, Syria, and southern Persia.**31093.** *VICIA DUMETORUM* L.*Distribution.*—Western and southern Europe, extending from Norway and Sweden southward to Spain and eastward through Italy, Bulgaria, and Greece to southern Russia and southwestern Siberia.**31094. CASTANEA CRENATA** Sieb. and Zucc.**Chestnut.**

From Japan. Presented by the Agricultural College, Tohoku Imperial University, Sapporo, Japan. Received May 25, 1911.

This is probably the *Aomori* variety, which is one of the hardier Japanese varieties, introduced for the work of a breeder who is trying to produce disease-resistant strains of chestnut.**31095 and 31096.**

From Baguio, province of Benguet, Philippine Islands. Received through Mr. C. V. Piper, Bureau of Plant Industry, May 25, 1911.

Seeds of the following; quoted notes by Mr. Piper:

31095. *ROSA MULTIFLORA* Thunb.

Rose.

"An evergreen (?) species with stems 3 to 10 feet high. Flowers white, small, in cymes of 10 to 15. Suggests the Cherokee rose on a small scale."

31096. *RUBUS FRAXINIFOLIUS* Poir.

"Shrub 5 to 10 feet high, quite erect, stems not very prickly, red; leaves evergreen, shiny, pinnate, with 7 leaflets; fruit scarlet, as large as a big raspberry, with very numerous small drupelets; not much flavor."

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31095 and 31096—Continued.**31096—Continued.**

Distribution.—Apparently one of several forms closely related to *Rubus rosae-folius* Smith, and found from India eastward through the Malay Archipelago to Australia.

31097. JUBAEA CHILENSIS (Mol.) Baill.**Palm.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, May 26, 1911.

"The tree is called *Palma de Chile*; the fruit *Coquitos*; Indian names *Lilla* and *Caucau*. This is the tall, slim sort with a trunk about 18 or 20 inches in diameter. Practically all these trees are found at the hacienda 'Palmas de Ocoa,' where there are said to be over 2,500, forming woods upon the dry, level land; in other parts of Chile they are very scarce, only individual trees are found rarely and at great distances apart. They do not grow in the south, I presume on account of the moisture. They grow in the driest parts. In the hacienda 'Palmas de Ocoa,' they manufacture palm sirup upon a large scale. It is very good and healthful and is in general use among well-to-do families. It is too high to be used by the poor, as a small can 2 $\frac{3}{4}$ inches in diameter by 4 $\frac{1}{2}$ inches high costs 50 cents gold. This is also served alone as a dessert dish.

"I fear these magnificent trees, tropical plants that withstand hard frosts and the greatest droughts, will become extinct in the near future, for they are tapped, generally with an ax, each year; no proper attention is paid to conservation." (*Husbands*.)

31098. ERYTHRINA LITHOSPERMA Blume.

From Mandalay, Burma. Presented by Mr. J. Mackenna, Director of Agriculture. Received May 19, 1911.

"This is known in Burmese as *Ye-ka-thit*." (*Mackenna*.)

Procured for the Porto Rico Agricultural Experiment Station for experimental growing as a shade in young coffee and cacao plantations.

Distribution.—In the vicinity of Rangoon in southern Burma and in Java and the Philippine Islands.

31099. ORYZA SATIVA L.**Rice.**

From Soochow, China. Presented by Mr. N. Gist Gee, Department of Natural Science, Soochow University. Received May 27, 1911.

"This is a peculiar variety of rice which the Chinese grow near here that is not grown elsewhere, they say. This rice when cooked shows a very decidedly reddish color, and for this reason it is called *Shuih no me* in our dialect; this translated means blood glutinous rice. The general belief among them is that it is a rapid strength giver, and they all make an effort to get some of it when they have been sick or run down physically for some time. I am not ready to vouch for any of their beliefs about it except its peculiar color. I have eaten it and find its color when cooked quite unusual." (*Gee*.)

31101. LUPINUS sp.

From Paraguay. Presented by Dr. Moises S. Bertoni, Puerto Bertoni, Paraguay. Received May 26, 1911.

"This is a wild species that grows in the most sterile soils, even in the loose sand of the river shore." (*Bertoni*.)

31102. LALLEMANTIA IBERICA (Bieb.) Fisch. and Mey.

From Erfurt, Germany. Purchased from Haage & Schmidt. Received May 26, 1911.

See No. 29932 for description.

31103. CHRYSANTHEMUM COCCINEUM Willd.

From Ungarisch-Altenburg (Magyar-Ovar), Hungary. Presented by Mr. J. Gyárfás, chief, Hungarian Plant-Culture Experiment Station. Received May 29, 1911.

Distribution.—Alpine and subalpine slopes of the mountains in the Caucasus region of southeastern Russia, Armenia, and northern Persia.

Introduced for the work of the Office of Drug-Plant, Poisonous-Plant, and Physiological Investigations in growing in the United States the various species of this genus which produce the pyrethrum insect powder.

31104. PHOENIX DACTYLIFERA L.**Date.**

From Tangier, Morocco. Presented by Mr. W. B. Harris. Received through Mr. Maxwell Blake, American consul general, June 1, 1911.

*Tafel*lt. See No. 18630 for description.

Seeds.

31105 to 31108.

From Nanking, China. Presented by Mr. F. B. Whitmore. Received May 29, 1911.

Seeds of the following:

31105 and 31106. HORDEUM VULGARE var.

Barley.

31105.

31106. Hull-less.

"The Chinese say one of their sages, about 600 B. C., found barley growing wild in what is now Chinese Turkestan, brought it to his people, and advised its use. The northern variety makes better flour, whiter, the Chinese say, because it blossoms at night, so men can live on it continually, while they can not live only on that grown in the South; it is too strong, because it blossoms in daytime." (*Whitmore*.)

31107. TRITICUM AESTIVUM L.

Wheat.

31108. FAGOPYRUM VULGARE Hill.

Buckwheat.**31109 and 31110. CARICA PAPAYA L.****Papaya.**

From Port of Spain, Trinidad. Presented by Mr. H. Caracciolo, St. Joseph's Nursery. Received May 22, 1911.

Seeds of the following:

31109. "The specimen from which these seeds were taken was oval, 9 by 6½ inches, and weighed 5½ pounds. The flesh was about 1 inch thick. The fruit arrived in very poor condition, which made it impracticable to say positively as to its quality; however, even under these conditions it possibly could be classed as very good." (*P. H. Dorsett*.)

31110. "The fruit from which these seeds were taken was 10 inches long by 5 inches in diameter at the large end and 3 inches at the small end. On account of the poor condition in which it arrived the quality could not be definitely determined, but it could probably be called very good." (*P. H. Dorsett*.)

31111. CARISSA OVATA R. Brown.

From New South Wales. Presented by Mr. Walter Froggatt, who procured them from Mr. R. T. Baker, curator, Technological Museum. Received May 27, 1911.

This native Australian species, the fruit of which is edible and largely used for jam, is introduced for use as a stock for the tenderer species of the genus in the hope of spreading the culture of this important home-garden fruit.

Distribution.—In the provinces of Queensland and New South Wales in Australia.

31112. HORDEUM VULGARE var.**Hull-less barley.**

From Sydney, New South Wales, Australia. Presented by Mr. Geo. Valder, chief inspector, through Mr. H. C. L. Anderson, undersecretary, Department of Agriculture. Received June 1, 1911.

31114. GOSSYPIUM sp.**Kidney cotton.**

From San Pedro Macati, near Manila, Philippine Islands. Presented by Dr. E. D. Merrill, Bureau of Science. Received May 26, 1911.

"This is a shrub 2 to 2½ meters (6½ to 8 ft.) high, commonly cultivated in the Philippines, but scarcely commercially; usually known as *bulac castila*, meaning Spanish cotton." (Merrill.)

31115. PHYTELEPHAS SEEMANNI O. F. Cook n. sp.**Panama ivory palm.**

"As already recognized by Spruce as far back as 1869, the name *Phytelephas macrocarpa* does not belong to the vegetable-ivory palm described by Seemann from Panama (Botany of the *Herald*, 1852-1857, pls. 45-47, p. 205). Two species, *macrocarpa* and *microcarpa*, both from the eastern slopes of the Andes of Peru, were named by Ruiz and Pavon in connection with the original description of the genus *Phytelephas*, but without distinctive characters other than the size of the fruits. Seemann did not know the Peruvian species, but was aware that the Panama palm was different from another *Phytelephas* found by Purdie in the upper valley of the Magdalena River in Colombia, supposed by Karsten to represent *Phytelephas microcarpa*. Spruce's account of the true *macrocarpa* of Peru leaves no doubt that the Panama species is entirely distinct. It has the trunk decumbent and creeping instead of upright, the leaves with fewer, larger pinnae, the spathes two instead of three or four, the male flowers with 36 stamens instead of 150 to 280. The fruits also are larger and contain more numerous nuts, but with fewer fruits in a head." (O. F. Cook.)

From Panama Canal Zone. Presented by Mr. Pablo Pinel, Panama. Received June 1, 1911.

31116 to 31192. ORYZA SATIVA L.**Rice.**

From Philippine Islands. Presented by Mr. Sam H. Sherard, agricultural inspector, Bureau of Agriculture, Manila. Received April 18, 1911.

Seeds of the following; quoted notes and names by Mr. Sherard:

"A complete list of all rice (palay) collected in January, Iloilo. This rice is classified in the following manner: *Bohol*, white and colored; hard when cooked. *Bisia*, white; soft when cooked. *Pilit*, colored; sticky when cooked. These kinds are further classified as *Munahan*, harvested in July and August; *Dagunan*, harvested in September, October, and November; *Ma-ean*, harvested in December and January."

31116 to 31192—Continued.

31116 to 31157. *Bisia.*31116 to 31130. *Munahan.*

31116. <i>Biray.</i>	31124. <i>Casicad.</i>
31117. <i>Benihod.</i>	31125. <i>Magsana-ya.</i>
31118. <i>Bugna.</i>	31126. <i>Ontramis.</i>
31119. <i>Cahon-bon.</i>	31127. <i>Quinopong.</i>
31120. <i>Cabu-ong.</i>	31128. <i>Rimocon.</i>
31121. <i>Cadimayan.</i>	31129. <i>Tinabono.</i>
31122. <i>Calotac.</i>	31130. <i>Tinoramis.</i>
31123. <i>Caporcas.</i>	

31131 to 31153. *Dagunan.*

31131. <i>Cabilistos.</i>	31143. <i>Dinalosan.</i>
31132. <i>Cabuad.</i>	31144. <i>Manumbalay.</i>
31133. <i>Cadacag.</i>	31145. <i>Quinalhuay.</i>
31134. <i>Calaya.</i>	31146. <i>Tayabas.</i>
31135. <i>Calipayan.</i>	31147. <i>Ylognon.</i>
31136. <i>Capurcos.</i>	31148. <i>Maguenos.</i>
31137. <i>Caracag.</i>	31149. <i>Caouay.</i>
31138. <i>Catoc-toc.</i>	31150. <i>Tabucanan.</i>
31139. <i>Caton-og.</i>	31151. <i>Pinili.</i>
31140. <i>Catorsa.</i>	31152. <i>Lonag.</i>
31141. <i>Catunda.</i>	31153. <i>Diamante.</i>
31142. <i>Ceredonce.</i>	

31154 to 31157. *Ma-can.*

31154. <i>Calubug.</i>	31156. <i>Siniñora.</i>
31155. <i>Saigon.</i>	31157. <i>Bulacnaga.</i>

31158 to 31166. *Bilit.*31158 and 31159. *Munahan.*

31158. <i>Munahan.</i>	31159. <i>Minantica.</i>
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31160 to 31163. *Dagunan.*

31160. <i>Dayoyo.</i>	31162. <i>Soladang.</i>
31161. <i>Morado.</i>	31163. <i>Quinarne.</i>

31164 to 31166. *Ma-can.*

31164. <i>Jumiad.</i>	31166. <i>Quinarabao.</i>
31165. <i>Moranquit.</i>	

31167 to 31186. *Bohol.*31167 to 31169. *Munahan.*

31167. <i>Cutchiam.</i>	31169. <i>Marong-paroc.</i>
31168. <i>Guinatus.</i>	

31170 to 31178. *Dagunan.*

31170. <i>Barao.</i>	31175. <i>Pinili.</i>
31171. <i>Caleso.</i>	31176. <i>Quinadios.</i>
31172. <i>Capungod.</i>	31177. <i>Tumanan.</i>
31173. <i>Caputol.</i>	31178. <i>Camarines.</i>
31174. <i>Delinquente.</i>	

31116 to 31192—Continued.**31167 to 31186—Continued.****31179 to 31186. *Ma-can.***

31179. <i>Arabuon.</i>	31183. <i>Tapul.</i>
31180. <i>Cabonlog.</i>	31184. <i>Carnate.</i>
31181. <i>Quilala.</i>	31185. <i>Pinili.</i>
31182. <i>Morado.</i>	31186. <i>Calana.</i>

31187 to 31190. Raised in Munoz, Nueva Ecija, by Mr. Percy Hill.

31187. *Malakit*, or sticky palay. Planted July 5, transplanted September 2, harvested December 22, 1910.

31188. *Palay lloco.* Planted June 12, transplanted July 28, harvested December 18, 1910.

31189. *Paaga-Binuncloc*, or early palay. Planted broadcast June 20, harvested October 25, 1910. Yielded 48.3 bushels per acre.

31190. *Minalit.* Planted June 30, transplanted August 19, harvested January 2. Average yield 73.2 bushels per acre. A good eating rice.

31191. *Dampites.* From province of La Union.

31192. *Ilocano.* From province of Nueva Ecija.

31193. CASTILLA sp.**Central American rubber.**

From Mexico. Presented by Mr. J. C. Harvey, Plantación La Buena Ventura, Sanborn, Vera Cruz, Mexico. Received June 5, 1911.

Introduced for the work of the Bureau in encouraging rubber culture in Porto Rico, the Canal Zone, and Hawaii.

31194. SPHENOSTYLIS STENOCARPA (Hochst.) Harms.

From Amani, German East Africa. Presented by Dr. A. Zimmerman, director, Biological Agricultural Institute. Received June 5, 1911.

"This is a legume which forms edible tubers, and which is cultivated by the natives in the region of Tabora. The taste of the tubers is similar to potatoes." (*Zimmerman.*)

Distribution.—From the valley of the Kongo southward to Angola on the west coast of Africa and on the east coast from Abyssinia southward to Mozambique.

31195. LINUM sp.**Wild linseed.**

From Szechwan, China. Presented by Mr. A. Sugden, Custom House, Hankow. Received June 5, 1911.

"This seed is sown in June in sandy soil and untended, the Chinese saying it refuses to be cultivated." (*Sugden.*)

31197. ENTELEA ARBORESCENS R. Br.**Whau.**

From Wellington, New Zealand. Presented by Mr. T. W. Kirk, Director of Orchards, Gardens, and Apiaries, Department of Agriculture, Commerce, and Tourists. Received June 5, 1911.

See No. 11746 for previous introduction.

31198 to 31202. ULLUCUS TUBEROSUS Caldas.**Melloca.**

From the province of Jauja, department of Junin, Peru. Presented by Mr. James Arthur Furlong, Perene Colony, Peru. Received June 5, 1911.

Tubers of the following:

31198. Orange.

31199. Orange red.

31198 to 31202—Continued.**31200.** Yellow.**31202.** Cream colored, spotted with red.**31201.** Mottled red.

"These tubers grew at an elevation of about 12,000 feet, in poor and stony soil, worked with wooden plows. The Ullucus are sown in drills like potatoes, after which they are molded and worked with hoes." (*Furlong.*)

"The melloca is half a runner; its shoots, without support, send out roots wherever the ground is touched. Its leaves are thick and fleshy; from being large and spreading, they become erect and round like a shell in the fully developed plant. The flowers, which are small and greenish, spring in spikes from the axil of the leaves. The produce of the melloca consists in its tubers, which in their native country attain a considerable size. They are yellow, very smooth, full of starch, and appear on runners proceeding from the base of the stem and tending to rise to the surface of the soil; the plant must, therefore, be pretty well earthed up." (*Vilmorin, Jour. Hort. Soc. of London, vol. 5, 1850, p. 65.*)

"I have found this in all the Andean valleys between the River Apurimac and Potosi, i. e., between 13° and 19° 30' south latitude, and at an elevation of from 11,000 to 13,000 feet above the level of the sea. It is extensively cultivated in the vicinity of the populous Bolivian city of La Paz in common with the two varieties of *Oxalis tuberosa* (*Oca augris* and *Oca esaños*). It (the *Oca quina*) is planted between the 25th of July and the 10th of August, the seed employed being generally the smaller tubers unfit for food, and is gathered in during the last week of April. It will be recollected that these two periods of the year are the spring and autumn in the Southern Hemisphere. The mode of cultivation is in drills, into which the root is dropped with a little manure. I need scarcely state that at the great elevation of La Paz (upward of 12,000 feet) the climate even during the summer season is severe, scarcely a night passing over without the streams being frozen over, the sky being in general cloudless at all periods of the year except during the rainy season (December to March). Mean temperature 49°. The *Oca quina* (or melloca) is chiefly used in the preparation of Chuño, by alternately freezing the tubers and steeping, by which they are changed into an amylaceous substance, the form under which not only the Ocas but the common potato are chiefly employed by the Indian population; an operation probably introduced from the difficulty of boiling the unprepared tuber at an elevation above the sea where the point of ebullition of water is scarcely high enough to cook raw vegetables, 192° to 195° of Fahrenheit's scale." (*Pentland, J. B. Gardeners' Chronicle, No. 53, 1848, p. 862.*)

"In addition to these statements I think it right to say that there is little probability of this plant becoming useful as a garden esculent. Its produce will probably be found large when it is cultivated in the manner which the experience already gained shows to be necessary to it, namely, when planted in the beginning of March, the little tubers being used for sets, earthed up in July, and harvested in November. The leaves and tubers are no doubt nutritive but so full of an insipid and somewhat earthy slime that whether as spinach or as boiled tubers it will never be received at the table of persons of taste." (*Lindley, Jour. Hort. Soc. of London, vol. 5, 1850, p. 69.*)

31203. CLAUCENA LANSIUM (Lour.) Skeels.**Wampee.**

From Edinburgh, Scotland. Presented by the Regius Keeper, Royal Botanic Garden. Received June 1, 1911.

See Nos. 25546 and 27954 for previous introductions.

31204. CARYOCAR VILLOSUM (Aubl.) Persoon.**Piquiá.**

From Para, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. Received May 26, 1911.

"The piquiá is one of the forest trees of this vicinity that is highly prized for its lumber. The wood is extremely hard and strong, so strong in fact that the word piquiá is almost symbolic for strength; it is white and close grained. I have seen but one tree that stood in the open; in fruit with nearly all of its leaves shed it resembled one of our black walnuts in the fall of the year. The fruit is boiled before eating. After peeling off the thick rind, there remains a fatty layer of one-half inch thickness inclosing a rather spiny seed as large as a walnut in the hull. It is this fatty layer which is eaten boiled, but the kernel of the seed is eaten raw." (*Fischer.*)

Distribution.—A large tree in the forests of the northern part of South America, extending from Guiana southward to the valley of the Amazon in Brazil.

31206. MUSA sp.**Banana.**

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received June 6, 1911.

"This sucker came from an especially fine banana plant, one from which I cut a bunch weighing 52 kilos (114.64 lbs.). The bunch of bananas cost me 24 cents gold. This fruit was pronounced by four Argentinians as the finest flavored banana they had ever eaten." (*Mead.*)

31207. PASSIFLORA sp.**Passion fruit.**

From Montevideo, Uruguay. Presented by Mr. Frederick W. Goding, American consul. Received June 6, 1911.

"This fruit, indigenous to Uruguay, is called the *Viricuya*. It is a long, climbing, perennial vine, which is found only in forests along the margins of streams. The fruit, which is ripe here about the first of April, is similar in size and shape to a lemon. The skin is of a lovely orange yellow, smooth and shining. The interior is filled with a most luscious siruplike juice with a flavor peculiar to itself but most satisfactory to the taste. It contains a large number of seeds, resembling those found in the passion fruit.

"No seeds are on sale in the seed stores at present, and as the vine grows wild in unfrequented parts of the republic considerable difficulty will be experienced in obtaining a supply." (*Goding.*)

31208 and 31209. TRITICUM spp.**Wheat.**

From Khartum, Egypt. Presented by Mr. R. Hewison, Assistant Director of Agriculture, Sudan Government. Received June 7, 1911.

Seeds of the following; quoted notes by Mr. Hewison:

31208. Dongola. "This wheat is the sort grown by the native cultivators in the Dongola Province, but I am unable to discover its origin."

31209. Indian. "This was received from Egypt, where it had been grown. The crop from which this sample was taken is the third grown in the Sudan from the imported seed."

"These two wheats are from the crop that is now being harvested and have been grown on a commercial scale. They have both been grown under irrigation, were sown in November and harvested in March, actual period of growth being about four months. The seed is broadcast on land that has been watered about eight days previously and

plowed in with the Egyptian plow. Five to six waterings are given subsequently and our average yield for some 50 acres will this year amount to about 22 bushels per acre.

31210 to 31223.

From Lahore, India. Presented by Mr. W. R. Mustoe, superintendent, Government Agri-Horticultural Gardens. Received June 6, 1911.

Seeds of the following:

31210 to 31214. Procured from fruits purchased on the open market at the request of Mr. F. Booth Tucker, Salvation Army, Simla, India.

31210. CITRUS LIMONUM Risso. **Lemon.**

31211 and 31212. CITRUS LIMETTA Risso. **Lime.**

31211. *Kaghzi.* **31212.** *Sour.*

31213. CITRUS DECUMANA (L.) Murr. **Pomelo.**
Chakatra.

31214. CITRUS AURANTIUM SINENSIS L. **Orange.**
Nagpore.

31215 to 31223. Collected from fruit grown in the gardens.

31215. CITRUS LIMONUM Risso. **Lemon.**
Malta.

31216 and 31217. CITRUS LIMETTA Risso. **Lime.**

31216. *Khatta, sour.* **31217.** *Large sweet.*

31218 to 31220. CITRUS AURANTIUM SINENSIS L. **Orange.**

31218. *Sangtara.* **31220.** *Sylhet.*

31219. *Kaula.*

31221 and 31222. CITRUS DECUMANA (L.) Murr. **Pomelo.**

31221. **31222.** *Large fruited.*

31223. CITRUS sp.
Malta seed.

31224. DIOSPYROS LOTUS L.

From Lahore, India. Presented by Mr. W. R. Mustoe, superintendent, Government Agri-Horticultural Gardens. Received June 6, 1911.

Vernacular name *Lotos amlok*.

31225. CASTILLA sp. **Central American rubber.**

From Vera Cruz, Mexico. Presented by Mr. William W. Canada, American consul. Received June 8, 1911.

Introduced for the work of the Bureau of Plant Industry in encouraging rubber culture in Porto Rico, the Canal Zone, and Hawaii.

31226. CRYPTOCARYA sp.

From Chile. Received through Mr. José D. Husbands, Limavida, Chile, June 9, 1911.

"This fruit is edible and sweet with no ill flavor. The ones I send were dried in the sun to make them harder, as taken ripe from the tree they baffle description; the skin slides at touch revealing a viscous, slimy, ropy-mucous, soapy-mucilaginous jelly, elastic, stringy, and has ways of its own unexampled. It soon dries and shows other qualities. This material may be valuable. It reminds one of rubber, when dried." (*Husbands.*)

31227. CHRYSANTHEMUM MARSCALLII Aschers.

From Odessa, Russia. Procured from Mr. B. F. Shtamma; presented by Mr. John H. Grout, American consul. Received July 9, 1911.

"A perennial herb belonging to the Compositæ family, closely related to the plant furnishing the Persian insect powder (*Chrysanthemum roseum* W. and M.). The flowers and unopened flower buds, when dried and finely powdered, are used to kill insects, the powder of this species being known also as Persian insect powder. The flowers in some forms are double and give value to the plant as an ornamental. This species occurs with *Chrysanthemum roseum* in the high mountains of the Caucasus, Armenia, and northern Persia, where it occupies sunny areas." (R. H. True.)

31228. DRACAENA CINNABARI Balf. f. Dragon's-blood tree.

From island of Socotra, Africa. Procured by Mr. Charles K. Moser, American consul, Aden, Arabia. Received May 24, 1911.

"I saw three varieties of this tree growing close together and was much interested in their ruby exudations, of which the natives now make but little use. They call the tree *a'arâ-eëib* (as near as I can get it phonetically) and the exudation *mu-soilo*. This tree, I believe, would grow well in the San Bernardino Mountains, of which the Haghier Hills much remind me." (Moser.)

"I found the average height of this tree to vary from 18 to 20 feet, and its circumference from 3 to 5. When young they usually have but one stem and no branches, the leaves being disposed in the form of a star round the upper part, but as they get older they may be seen with three, four, and even five stems. From the extremity of each branch a cluster of leaves rises perpendicularly, which are disposed in a circular form radiating from the center. The branches are thickly interwoven in the most fantastic and tortuous shapes, but the foliage, assuming a more regular and better-defined outline, rises in a semicircular shape over the summit. Their appearance at a distance is therefore that of an inverted cone supported by a thin cylinder. The bark of the tree is of a lead color; the wood is soft and spongy, having thin longitudinal fibers extending along it; the roots spread very much, partially intersecting each other near the surface. Few of them extend to any depth, and they may frequently be observed seeking sufficient nourishment from the soil lodged in the cavities in the rocks. The Arabs consider the tree to be of different sexes. The male, they say, produces no gum, which exudes so spontaneously from the female trees that it does not appear necessary on any occasion to make incisions. Soon after the setting in of the southwest monsoon is considered to be the period most favorable for collecting it." (Wellsted, *Travels in Arabia*, vol. 2, 1838, pp. 448-451.)

31229 to 31231.

From Peru. Presented by Mr. J. A. Furlong, Perene, Peru. Received June 9, 1911.

Tubers of the following:

31229. IPOMOEA BATATAS (L.) Poir. Sweet potato.

"Grown by the savages in the Perene district." (Furlong.)

31230 and 31231. SOLANUM spp. Potato.

31230. "Tubers uniform in size, small to medium. Shape uniform, mostly round to oblate, flattened. Surface smooth to knobby. Distal end obtuse to truncate. Stem small to large, central. Proximal end obtuse to truncate. Bud-eye cluster small to large, little too much depressed, central. Cavity rather large, narrow to broad, deep, irregular. Skin thick, tough, not easily bruised, glossy to dull, purple to violet mottled with coppery yellow, variable. Eyes few to many, mostly grouped at distal end, small to large, deep, compound, regular, com-

31229 to 31231—Continued.**31230 and 31231—Continued.****31230—Continued.**

pressed, purple. Eyebrows prominent to inconspicuous, short to long, curved. Flesh fine, firm, juicy to dry, white to yellow."

31231. "Tubers uniform and medium in size. Shape uniform, elongated, regular. Surface smooth. Distal end round. Bud-eye cluster small to large, a little depressed, central. Proximal end round. Stem small, deciduous, central. Cavity, none. Skin thick, tough, not easily bruised, dull, purple with coppery cast, uniform. Eyes many, single, large, deep, compound, regular, compressed, purple. Eyebrows prominent to inconspicuous, short to long, straight to curved. Flesh fine, firm, juicy to dry, white to yellow." (*William Stuart.*)

"These potatoes are grown in a place called Huasahuasi, which is 10,000 feet above sea level, by Hill Indians. They are called *Papas de Mesa*, and are much esteemed by the natives. For sowing them the ground is broken by the primitive wooden plow. After it is crossed and drilled for the reception of the seed potatoes they are sown by hand, and after they appear above ground are cultivated by hand hoes of a very primitive pattern, having a wooden handle about 18 inches long. A fine tool to break the backs of any people but Hill Indians." (*Furlong.*)

31236 to 31240.

From Peru. Presented by Mr. J. A. Furlong, Perene. Received June 5, 1911. Seeds of the following; quoted notes by Mr. Furlong:

31236. TRITICUM AESTIVUM L.**Wheat.**

"From the province of Jauja, department of Junin, grown at an elevation of about 12,000 feet in very poor, stony soil, worked with the primitive wooden plows to a depth of about 4 inches. Is usually sown in drills."

31237. PHASEOLUS VULGARIS L.**Bean.**

"*Frijoles blancos* (white Lima beans). Grow well in almost any kind of soil when sown in the spring of the year. These are grown in the Perene, elevation 2,100 feet."

31238. PROSOPIS JULIFLORA (Swartz) DC.**Algaroba.**

"*Algaroba*, from Tumbes, department of Piura, Peru. This variety grows wild all over the department and forms the principal food of goats, horses, and horned cattle. The tree is being fast killed out by charcoal burners. This seed is part of a lot of 50 pounds brought to the Perene for experimental planting in a dry, sandy soil. The nursery has been made in horse manure, in which the seedlings are coming up fine."

31239. LYCOPERSICON sp.**Tomato.**

"A wild variety found growing in the Perene. Soil very sandy; temperature 80° Fahrenheit in the shade. Elevation 2,100 feet above sea level. The seed was without doubt at one time imported and has now deteriorated. The tomatoes are used exclusively for food purposes. They are about the size of large marbles and are very palatable."

31240. CHENOPodium QUINOA Willd.**Quinoa.**

"Grown at 12,000 feet elevation in the province of Jauja; is a food much esteemed by the Cholo Indians; is sown in drills and very lightly covered with earth. It is ready to harvest in about six months, which is done the same as rice and replaces that grain in everything."

31241 to 31268.

From La Mortola, Ventimiglia, Italy. Presented by Prof. Alwin Berger. Received April 5, 1911.

Seeds of the following:

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|---------------|---|-------------------|
| 31241. | ASPARAGUS ACUTIFOLIUS L. | Asparagus. |
| 31242. | ASPARAGUS COOPERI Baker. | Asparagus. |
| 31243. | ASPARAGUS CRISPUS Lam. | Asparagus. |
| 31244. | BERBERIS JAPONICA BEALEI (Fortune) Skeels. | Barberry. |

(*Berberis bealei* Fortune, Gardeners' Chronicle, 1850, p. 212.)

This round-leaved form of the Japanese barberry, discovered by Dr. Fortune in a garden in the province of Kiangsu, near Shanghai, China, seems never to have been united with *Berberis japonica*, where it so evidently belongs.

- 31245.** **BERBERIS GLOBOSA Benth.**

Distribution.—The slopes of the Andes in the vicinity of Bogota, Colombia.

- 31246.** **BERBERIS GUIMPELI Koch and Bouche.**
31247. **BUDDLEIA BRASILIENSIS Jacq.**
31248. **BUDDLEIA GLOBOSA Hope.**
31249. **BUDDLEIA MADAGASCARIENSIS Lam.**

Distribution.—Along streams in the Mascarene Islands and in Madagascar; introduced into India, Africa, and South America.

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|-------------------------|-------------------------------------|----------------|
| 31250. | TOONA CILIATA Roem. | |
| 31251. | CERATONIA SILIQUA L. | Carob. |
| 31252 and 31253. | CITRUS AURANTIUM SINENSIS L. | Orange. |
| 31254. | CITRUS DECUMANA L. | Pomelo. |

- 31255.** **ILEX CORNUTA Lindl. and Paxton.**

See Nos. 22979 and 24638 for previous introductions.

- 31256.** **LYGEUM SPARTEUM Loeffl.** **Esparto grass.**

See Nos. 3334 and 21504 for previous introductions.

Distribution.—Southern Europe and northern Africa, extending from Spain and central Italy to Corsica, Sardinia, and Sicily, and through northern Africa from Morocco to Egypt.

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|---------------|--------------------------------------|---------------------|
| 31257. | MORAEA sp. | |
| 31258. | MORAEA IRIDIROIDES L. | |
| 31259. | PISTACIA LENTISCUS L. | Mastic tree. |
| 31260. | PSIDIUM ARAÇA Raddi. | Araça. |
| 31261. | QUERCUS SUBER L. | Cork oak. |
| 31262. | ROSA DAMASCENA Miller. | Rose. |
| 31263. | SABAL GLABRA (Mill.) Sargent. | |
| 31264. | SABAL BLACKBURNIA Glazebrook. | |

Distribution.—Frequent in the islands of Cuba and Haiti, and the Caribbean group.

- 31265.** **SOLANUM MELONGENA L.** **Eggplant.**

Variety *fructo globosa*.

- 31266.** **VERBASCUM OLYMPICUM Boiss.**

Distribution.—The vilayet of Kastamuni in the northwestern part of Asia Minor.

- 31267 and 31268.** **VITIS sp.**

31269 to 31271. MECONOPSIS spp.

From Liverpool, England. Presented by Bees Ltd. Received June 9, 1911.
Seeds of the following:

31269. MECONOPSIS INTEGRIFOLIA (Maxim.) Franch.

"This striking plant was first discovered by the celebrated Russian traveler, Przewalski, in 1872-73, in the extreme northwest of the province of Kansu, and he subsequently collected it in several different localities in the same region. Potanin also collected it in Kansu, in 1885. In 1887 it was collected by Delavay in the Snowy Range of Likiang, Yunnan, at an altitude of 13,000 feet; and in 1890 Mr. A. E. Pratt obtained very fine specimens in the neighborhood of Tachienlu. Its first appearance in European gardens seems to have been due to the Abbé Farges, who sent seed to Mr. Maurice L. de Vilmorin in 1895, with whom it flowered in 1897, but it produced no seed and was consequently lost to cultivation.

"In 1903 Messrs. James Veitch & Sons sent Mr. E. H. Wilson on a second journey to China, one of the principal objects being to collect seeds of *Meconopsis integrifolia*. He 'found it in millions' in the mountains west of Tachienlu at elevations of 11,000 to 15,500 feet; never lower. As may be expected, it is perfectly hardy in the open ground, but, what was less to be expected, it flourishes and flowers freely without any special treatment. Whether it will seed, time will prove. Under the most favorable conditions in a wild state, Mr. Wilson observed plants about 3 feet high, bearing as many as 18 flowers, while at its greatest altitudinal limit it is reduced to a rosette of leaves with one flower nestling in the center.

"It is a robust biennial, usually 1½ to 3 feet high, densely clothed with long silky hairs varying in color, but usually yellowish brown. Stem stout; branches and peduncles in whorls. Leaves numerous, mostly linear-lanceolate, 6 inches to 1 foot long, shorter on the stem. Peduncles longer than the leaves, one-flowered, clothed with reversed hairs. Flowers yellow, usually 5 to 6 inches in diameter, sometimes as much as 10." (*Extract from Curtis's Botanical Magazine, vol. 1, ser. 4, 1905.*)

Distribution.—Slopes of the mountains in the provinces of Kansu and Yunnan in China.

31270. MECONOPSIS DELAVAYI Franch.

"This beautiful little plant was first discovered by Pere Delavay in 1884 on the eastern flank of the Lichiang Range, northwest Yunnan, at about 12,500 feet altitude. In height it varies from 5 to 9 inches, reaching the latter only in the most favorable situations. The roots are long, thick, and fleshy. Flowers solitary, semipendulous, 1½ to 2 inches in diameter, color deep, satiny, purple-blue. Mature capsule, erect, 2 to 3 inches in length by ¼ inch in diameter. This charming species flowers in June or July, and there is little doubt of its proving perfectly hardy in this (Scotland) climate. The flowers, with their shining, deep-colored petals and orange-colored anthers, form a delightful contrast to the glaucous green of the foliage and scapes. The species is gregarious, and delights in open, sheltered situations. The first specimens found by me formed small, scattered colonies along the base of a series of ragged limestone cliffs, at about 11,000 to 12,000 feet. These were growing on poor, patchy pasture, in the shelter of dwarf bushes and under the lee of rocks. The soil was composed of limestone, gravel, and chips of varying size. The roots of the species are thick and fleshy and, in the exceedingly free formation, penetrate to quite a considerable depth, in many instances as much as 12 to 18 inches. Later in the season the species was met with in greater abundance at a higher

31269 to 31271—Continued.**31270—Continued.**

altitude (13,000 to 14,000 feet), growing amongst heavy, alpine pasture in conjunction with *Meconopsis integrifolia* and *M. forrestii*. One peculiar feature of *Meconopsis delavayi* is the remarkable elongation of the scape during the maturation of the capsule; some seen were as high as 2 feet, or nearly four times the normal height of the scape during the flowering period." (*George Forrest, Gardeners' Chronicle, July, 1911.*)

Distribution.—On the slopes of the mountains at an altitude of 12,000 feet in the vicinity of Likiang in the province of Yunnan, China.

31271. MECONOPSIS HORRIDULA RUDIS Prain.

Distribution.—Same as No. 31270.

31272. ERIOBOTRYA JAPONICA (Thunb.) Lindl.**Loquat.**

From Tunis, North Africa. Presented by Mr. L. Guillochon, Jardin d'Essais de Tunis. Received June 12, 1911.

Seeds.

31273. ARRACACIA XANTHORRIZA Bancr.**Arracacia.**

From Caracas, Venezuela. Presented by Mr. Antonio Valero Lara. Received June 12, 1911.

"This is known by the name of *Yuco* because the color of the stem and leaves is dark and so deep as to be almost black, and there are places where it is known as *Apió negro*. This is made into preparations for the table as legumes are, in a kettle or a glazed pot, for soups, cakes, conserves, and finally a flour is obtained from it called *sulu*, which is highly nutritious for convalescing invalids, babies, and old people." (*Lara.*)

Tubers.

31274. ASPARAGUS HATCHERI Hort.**Asparagus.**

From Hoffmans, N. Y. Purchased from Mr. John C. Hatcher, Amsterdam, N. Y. Received June 12, 1911.

"This variety originated with John C. Hatcher at his greenhouses in Hoffmans, N. Y., some 12 to 14 years ago. The original plant was discovered in a bed of *Asparagus plumosus*, and there is reason to believe that it is a chance hybrid. Mr. Hatcher had been experimenting with asparagus for a number of years before the discovery of this variety, feeling assured that it was possible to produce something superior to *A. plumosus*. About that time he had been crossing several varieties, and his belief is that *Asparagus hatcheri* is the result of a cross between *A. plumosus* and a variety which he ran across in England some 15 years ago.

"Attention was immediately directed to the new plant by reason of its dense and symmetrical growth of dainty, fern-like fronds, the latter being set close together along the stalk and producing splendid fronds averaging 12 to 15 inches or more, as against those of *A. plumosus*, which average from 8 to 10 inches. It is a very free grower, its productive value being as 3 to 1 compared to the old variety, as it will make a string 24 feet long while *A. plumosus* is making one of 8 feet. Its large fronds and lasting qualities make it far superior to the old variety for decorative use. On account of the density of its growth it is much preferred by retailers for bunch work.

"*A. hatcheri* has been given the severest possible test in every direction and stands approved by those who have been fortunate enough to obtain the stock or to use it for decorative purposes." (*Extract from the Florists' Exchange, May 6, 1911, p. 935.*)

31275. SOLANUM TUBEROSUM L.**Potato.**

From Paraguay. Presented by Dr. Moises S. Bertoni, Estacion Agronomica, Puerto Bertoni, Colonia Bertoni, Paraguay. Received June 12, 1911.

Variety *guaraniticum*. "This is a variety of the *Solanum tuberosum* that grows wild in Paraguay and has been confounded with the *Solanum commersonii* of Uruguay. I gave it the name of *Solanum tuberosum* var. *guaraniticum*; see Praelim. ad Floram Guaran., part 1." (*Bertoni*.)

31276 to 31307.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, June 3, 1911.

The following seeds and plants:

31276. EUONYMUS sp.

From mountains near Ta-si-ku, Ili Valley, Chinese Turkestan. Altitude, 4,500 feet. "(No. 982, April 8, 1911.) A small, creeping variety, found on northern exposed, grassy mountain slopes and between shrubs on somewhat moist and cool places. Makes stems 3 to 4 feet in length when growing in some well-protected situation. Leaves small, wine red underneath, and semipersistent. Of possible value in northern regions as a ground cover beneath trees. May be expected to be hardier than the ordinary *Euonymus radicans* and its varieties, as the climate of Ili Valley is decidedly of a severe continental nature, e. g., on November 24, 1910, the mercury dropped to -30° C., or -22° F." (*Meyer*.)

31277. IRIS sp.**Iris.**

From near Kizil-Bulak, Tien Shan Range, Chinese Turkestan. Altitude, 7,000 feet. "(No. 983, March 5, 1911.) An iris found on moist, low places at the foot of dry, sun-burned rocks. Of possible value as a garden perennial in uncongenial climates." (*Meyer*.)

31278. IRIS sp.**Iris.**

From mountains near Ta-si-ku, Ili Valley, Chinese Turkestan. Altitude, 4,500 feet. "(No. 984, April 8, 1911.) An iris found on the southern slopes of clayey mountains. Probably dies off early in the season like spring bulbs. Perhaps of value as a spring-flowering perennial in the northern sections of the United States." (*Meyer*.)

31279. MALUS sp.**Apple.**

From hamlet of Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude, 3,700 feet. "(No. 1588a, March 18, 1911.) A wild apple found in abundance in several of the Tien Shan valleys. Apparently of great value as a factor in hybridization work. For further remarks see Nos. 30947, 30948, and 30949." (*Meyer*.)

31280. MALUS sp.**Apple.**

From Kulja, Chinese Turkestan. "(No. 1589a, March 25, 1911.) Seed taken from dried, sliced apples purchased on the local market. Of value like the preceding number." (*Meyer*.)

31281. PRUNUS ARMENIACA L.**Apricot.**

From hamlet of Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude 3,700 feet. "(No. 1590a, March 18, 1911.) Obtained from a Sart settler. Wild apricots occur plentifully here and there in the northern Tien Shan Range. For further remarks see No. 30952." (*Meyer*.)

31276 to 31307—Continued.**31282. CRATAEGUS sp.****Hawthorn.**

From valley of the Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude 3,800 feet. "(No. 1591a, March 18, 1911.) A variety found along watercourses in thickets and as solitary specimens." (*Meyer.*)

31283. SORBUS sp.**Ash.**

From near Idin-Kul, Tien Shan Range, Chinese Turkestan. Altitude 8,000 feet. "(No. 1592a, March 10, 1911.) A so-called mountain ash found in cool and shady places at high altitudes. Grows to be a small tree, but is mostly seen as a tall shrub. Possibly of value as an ornamental garden and park tree in regions with long winters and cool summers." (*Meyer.*)

31284. AMELANCHIER sp.

From near Schutte, Tien Shan Range, Chinese Turkestan. Altitude 7,000 feet. "(No. 1593a, March 10, 1911.) A shrub found on stony mountain sides, often in the shade of tall trees. Grows from 3 to 6 feet tall and bears red berries. Possibly of value as an ornamental garden and park shrub in the northern regions of the United States." (*Meyer.*)

31285. COTONEASTER sp.

From near Kara Tugai, Tekes Valley, Tien Shan Range, Chinese Turkestan. Altitude 4,000 feet. "(No. 1594a, March 16, 1911.) A shrub occurring in a pebbly bank along the Tekes River. Of robust, dense growth, attaining a height of 5 to 8 feet. Bears blackish red berries which persist a long time. Of value like preceding number." (*Meyer.*)

31286. COTONEASTER sp.

From valley of the Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude 3,700 feet. "(No. 1595a, March 18, 1911.) A shrub occurring on rocky slopes; has slender branches 3 to 5 feet in length. Apparently very floriferous, as many of the shrubs were still covered with a multitude of small blackish berries at the time of collecting. Of value possibly like preceding number." (*Meyer.*)

31287. BERBERIS sp.**Barberry.**

From Tchoa, Tekes Valley, Tien Shan Range, Chinese Turkestan. Altitude 4,300 feet. "(No. 1596a, March 16, 1911.) A barberry found along the Tekes River on sandy, slightly moist places. Grows from 6 to 10 feet tall and becomes very dense. Leaves entire, somewhat leathery; berries in racemes, small and of red color. The natives use the old wood and root stumps to manufacture a yellow dye. Possibly of value like No. 31284." (*Meyer.*)

31288. BERBERIS sp.**Barberry.**

From near Ure-Bashi, Tekes Valley, Tien Shan Range, Chinese Turkestan. Altitude 4,800 feet. "(No. 1597a, March 15, 1911.) A robust-growing species of barberry, occurring on stony places near watercourses. Produces strong stems 8 to 10 feet in length. Leaves small; berries large and apparently of a brownish color. The natives use the stout stems for fencing material and in making artistic lattice work in the ceilings of their dwellings. Possibly of value like No. 31284." (*Meyer.*)

31289. BERBERIS sp.**Barberry.**

From near Kara Tugai, Tekes Valley, Tien Shan Range, Chinese Turkestan. Altitude 4,100 feet. "(No. 1598a, March 16, 1911.) A tall-growing barberry occurring in a pebbly bank along the Tekes River. Has large serrated leaves

31276 to 31307—Continued.**31289—Continued.**

and long, blue berries which are borne in abundance and are persistent. Of ornamental habits and content with rather sterile soils. Of value like No. 31284." (*Meyer.*)

31290. HALIMODENDRON HALODENDRON (Pallas) Voss.

From near Ure-Dalik, Chinese Turkestan. "(No. 1599a, February 14, 1911.) A spiny Colutealike shrub found on sandy and alkaline places in deserts where the moisture is not too far from the surface; will also stand some shade. Suitable for a hedge plant in regions where long, hot, and dry summers prevail and where the winters are cold. This number is a much more robust form than the one sent under No. 30415." (*Meyer.*)

31291. ROSA sp.**Rose.**

From valley of the Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude 3,500 feet. "(No. 1600a, March 19, 1911.) A wild rose growing in semishady places. Has tall, slender branches which are slightly drooping; has very few spines and to judge by the orange-red fruits left on the branches, must be very floriferous. Of value, possibly, as a factor in breeding experiments to create hardier and more floriferous roses for the northern sections of the United States." (*Meyer.*)

31292. ROSA sp.**Rose.**

From Kurgan, Tien Shan Range, Chinese Turkestan. Altitude 7,000 feet. "(No. 1601a, March 5, 1911.) A wild rose found in a very stony and dry bank. Of use perhaps as a stock in dry, cold regions." (*Meyer.*)

31293. CALLIGONUM sp.

From near Schul-Kuduk, Chinese Turkestan. "(No. 1602a, February 21, 1911.) A graceful-looking small desert shrub, having a multitude of slightly bent, very white branches, which are from 2 to 4 feet in length. Occurs in deserts of moving sands, where it builds small mounds. To be tested for its sand-binding capacities in the dry and not too cold sections of the United States." (*Meyer.*)

31294. CLEMATIS sp.**Clematis.**

From near Kizil-Bulak, Tien Shan Range, Chinese Turkestan. Altitude over 6,000 feet. "(No. 1603a, March 4, 1911.) A bushy clematis, occurring on dry, stony, and alkaline places." (*Meyer.*)

31295. IRIS sp.**Iris.**

From near Tuwan, Tekes Valley, Tien Shan Range, Chinese Turkestan. Altitude 6,000 feet. "(No. 1604a, March 14, 1911.) An iris found on moist low places, said to bear blue flowers. Rhizomes sent under No. 31277, which number see for further remarks." (*Meyer.*)

31296. ASPARAGUS sp.**Asparagus.**

From near Arwat, Tien Shan Range, Chinese Turkestan. Altitude 5,600 feet. "(No. 1605a, March 4, 1911.) A wild asparagus of slightly twining habits, found on sandy alkaline soil. Apparently rare. Possibly of value as an ornamental garden perennial and as a factor in breeding experiments." (*Meyer.*)

31297. ASPARAGUS sp.**Asparagus.**

From Tchoa, Tekes Valley, Tien Shan Range, Chinese Turkestan. Altitude 4,300 feet. "(No. 1606a, March 15, 1911.) A wild asparagus of climbing habits. Rhizomes sent under No. 30953, which number see for further remarks." (*Meyer.*)

31276 to 31307—Continued.

31298. CUCUMIS MELO L.

Muskmelon.

From Maral-Bashi, Chinese Turkestan. "(No. 1607a, February 16, 1911.) A very fine variety of winter melon, medium large; rind greenish brown; flesh very thick and of pistache color, very sweet in taste; few seeds. To be tested in sections of the United States where the summers are hot and long, the air dry, and where the soil is of a friable, slightly sandy nature and contains a fair percentage of alkaline matter." (Meyer.)

31299. CUCUMIS MELO L.

Muskmelon.

From Maral-Bashi, Chinese Turkestan. "(No. 1608a, February 16, 1911.) A fine winter melon called *Serick Kizlik*; small in size; shape round oblong; rind greenish brown; flesh thick, of a salmon-red color, and of very sweet taste. To be tested like the preceding number." (Meyer.)

31300. CUCUMIS MELO L.

Muskmelon.

From Maral-Bashi, Chinese Turkestan. "(No. 1609a, February 16, 1911.) A very fine winter melon of large size; oblong in shape; rind greenish brown; flesh of a light-salmon color and of an extraordinary thickness; taste fresh sweet, with a slightly saline aftertaste as nearly all the winter melons in Chinese Turkestan have. To be tested like the preceding numbers." (Meyer.)

31301. CUCUMIS MELO L.

Muskmelon.

From Kashgar, Chinese Turkestan. "(No. 1610a, February 3, 1911.) A summer melon called *Ak-Kokchi*, of small size, round shape, and having white meat of very sweet taste. Said to be early. To be tested like preceding numbers." (Meyer.)

31302. CUCUMIS MELO L.

Muskmelon.

From Kashgar, Chinese Turkestan. "(No. 1611a, February 3, 1911.) A summer melon called *Kok-Kokchi*; of small size and round shape; rind and meat both green in color, the latter very sweet and melting. Said to be early. To be tested like preceding numbers." (Meyer.)

31303. MEDICAGO FALCATA L.

From valley of the Chong Djighilan, Tien Shan Range, Chinese Turkestan. Altitude 3,700 feet. "(No. 1612a, March 18, 1911.) A wild yellow-flowered alfalfa. Roots sent under No. 30955, which number see for further remarks." (Meyer.)

31304. MEDICAGO SATIVA L.

Alfalfa.

From Lou Tchao Ku, Ili Valley, Chinese Turkestan. "(No. 1613a, April 9, 1911.) A wild alfalfa." (Meyer.)

31305. MEDICAGO sp.

Alfalfa.

From near Kurre, Tien Shan Range, Chinese Turkestan. Altitude 7,000 feet. "(No. 1614a, March 13, 1911.) A wild alfalfa. Roots sent under No. 30954, which number see for further remarks." (Meyer.)

31306. VICIA sp.

Vetch.

From Kurre, Tien Shan Range, Chinese Turkestan. Altitude 7,100 feet. "(No. 1615a, March 13, 1911.) A vetch found in wild harvested hay, considered by the natives to be a very nutritious food for cattle, but especially good for horses. To be tested for its possible fodder value in the northern sections of the United States." (Meyer.)

31276 to 31307—Continued.**31307. PHASEOLUS VULGARIS L.****Bean.**

From Suiting, Ili Valley, Chinese Turkestan. Altitude 2,400 feet. "(No. 1616a, April 9, 1911.) An uncommon variety of garden bean, probably has been brought in from Kansu. To be tested in cool, elevated regions as a garden vegetable." (*Meyer*.)

31308. CICER ARIETINUM L.**Chick-pea.**

From Guadalajara, Mexico. Presented by Mr. Samuel E. Magill, American consul. Received June 13, 1911.

"*Garbanza Espanola*. This crop is grown without irrigation; about 100 kilos (220.46 lbs.) of seed is used for every $6\frac{1}{2}$ acres and is planted in rows; crop is not cultivated, nor is machinery of any kind used at any time. There is no preparation of the pea for human consumption other than to screen out the largest. As the pea is very hard it must be ground or boiled for a long time for soup before it can be eaten. The small peas not marketable for export are fed to hogs, and the pods and leaves are fed to milch cows. Practically all of the large peas are exported to Spain and Cuba. Recently, however, there has been a demand for them in the United States. The wet season is between June and October, and the dry season from October to June. There is no known insect that interferes with the growth of the plant or the maturing of the pea." (*Magill*.)

31309. ELEPHANTORRHIZA ELEPHANTINA (Burch.) Skeels.

From Springbok Flats, Waterberg District, Transvaal, South Africa. Presented by Prof. J. Burt Davy, Government agrostologist and botanist, Department of Agriculture, Pretoria, South Africa. Received June 14, 1911.

See No. 25941 for description.

31310. ANNONA CHERIMOLA Miller.**Cherimoya.**

From Peru. Presented by Mr. Geo. W. Baird, Washington, D. C. Received June 16, 1911.

Mr. Baird says these seeds are from the best variety he ever ate.

31311. MAURITIA FLEXUOSA L. f.**Mirity.**

From Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense, Para, Brazil. Received June 17, 1911.

"What Wallace says of the fruits (see Bailey's *Cyclopedia of American Horticulture*, p. 994) is certainly true; I estimated the number of fruits on the compound spadices as high as 500, and I was told that I never saw the largest. These palms are a very conspicuous feature along the Maju River, whence I brought the seeds. I understand that the seeds were once, i.e., before the days of rubber, quite largely exported for making buttons. This is one of the so-called ivory nuts." (*Fischer*.)

"This is a magnificent palm, its cylindrical stems rising like Grecian columns to a height of 100 to 150 feet, terminated by a crown of large fan-shaped leaves, from the base of which is produced a big bunch of pendulous fruits, some measuring 8 to 10 feet in length, weighing 200 to 300 pounds and containing several bushels of fruit. Each fruit is about the size of a small apple, having a reticulated, polished, smooth shell." (*Smith, Dictionary of Popular Names of Plants.*)

Distribution.—In low woods in the northeastern part of South America, extending from Dutch Guiana southeastward to the lower valley of the Amazon.

31312 and 31313. ANACARDIUM OCCIDENTALE L.**Cashew.**

From Bassein, India. Presented by the curator of the Botanical Gardens of the Experimental Farm. Received through Mr. Edwin S. Cunningham, American consul, Bombay, India, June 12, 1911.

Seeds of the following:

31312. Red variety**31313.** Yellow variety.

"In transmission the curator states 'The plant likes perfect drainage. Any sandy soil with few gravels, pebbles, etc., suits the plant to grow. In their natural state they are seen growing on small hills. The root is tapering and does not stand transplanting like Landolphas, unless very carefully attended to. I have seen plants bearing fruit right from the Equator to 23° N. up to an elevation of 3,000 feet.' "

(Cunningham.)

31314 to 31316.

From Tunis. Presented by Mr. Frank Edward Johnson, Wauregan House, Norwich, Conn. Received June 12, 1911.

Seeds of the following; quoted notes by Mr. Johnson:

31314. HORDEUM VULGARE L.**Barley.**

"Orge (barley) grown on the hills around Matmata, southern Tunis, in dry soil. Very little rain in winter; none in spring or summer."

31315. TRITICUM DURUM Desf.**Wheat.**

"Wheat picked in the large oasis near Gabes. Plenty of irrigation."

31316. TRITICUM sp.**Wheat.**

"Native Arab wheat (almost black when ripe) picked by myself at Matmata. Dry soil. No water."

31317. ERYTHRINA POEPPIGIANA (Walp.) Skeels.**Bucare.**

(*Micropteryx poeppigiana* Walp., *Linnaea*, vol. 23, 1851, p. 740.)

(*Erythrina micropteryx* Poepp.; Urban, *Symbolae Antillanae*, vol. 1, 1899, p. 327.)

The seeds of this Peruvian leguminous tree were received from Porto Rico under the name *Erythrina micropteryx*. This name was applied to the species by Poeppig on a herbarium specimen, but apparently was not formally published until 1899, when Urban applied it to the plant. But in 1851 Walpers had published the name *Micropteryx poeppigiana*, based on Poeppig's specimen of *Erythrina micropteryx*; and, *poeppigiana* being the earliest published specific name, it is here restored in accordance with the present rules of botanical nomenclature.

From Mayaguez, Porto Rico. Received through Mr. D. W. May, special agent in charge, Porto Rico Agricultural Experiment Station. Received June 16, 1911.

"A leguminous tree of 15 to 20 meters (50 to 65 ft.) beset with short, conical spines; flowers red. Cultivated as a shade tree for coffee and reported from numerous localities in Porto Rico. It is native of the lower Andes of Peru." (Cook and Collins, *Economic Plants of Porto Rico*, 1903, p. 139.)

31318 to 31320. COLOCASIA spp.**Dasheen.**

From Tientai, via Ningpo, China. Presented by Mrs. A. O. Loosley, China Inland Mission. Received June 13, 1911.

Tubers of the following:

31318 to 31320—Continued.

31318. "The tubers of this variety, when cooked, are dry and mealy and are rather whiter than the *Yü-na* variety. The leafstalk is referred to by the Chinese as white." (*Loosley.*)

"The tubers are nonacid when raw. The flesh and sprouts are white. When cooked the flesh is of fair flavor." (*R. A. Young.*)

31319. "The tubers of this variety when cooked are white at the heart and purplish colored outside. They are stocky and moist. The leafstalk is called *Yü-na* (black). This variety must be grown deep in damp soil (not water), and the earth should be kept banked up. In dry weather they should be watered." (*Loosley.*)

"The tubers are nonacid when raw. The flesh and sprouts are white. When cooked the tubers are lacking in flavor." (*R. A. Young.*)

31320. "Tuber pink sprouted." (*R. A. Young.*)

31321 to 31323. TRIFOLIUM LUPINASTER L. Lupine clover.

From Russia. Received through Prof. N. E. Hansen, South Dakota Agricultural Experiment Station, Brookings, S. Dak., May 20, 1910. Numbered June 17, 1911.

Seeds of the following; notes by Prof. Hansen:

31321. "(H. No. 285). The same as No. 28313. This is selection No. 2, the third generation from one plant; very tall, without branches, but many stems; stems woody."

31322. "(H. No. 286.) The same as No. 28313. This is selection No. 3, the third generation from one plant; plant tall, with single stems and abundance of large leaves."

31323. "(H. No. 287.) The same as No. 28313. This is selection No. 4. The main endeavor with this species is to improve the plant in size and number of leaves. This species of clover is very widely distributed throughout Siberia, ranging to north of the Arctic Circle. It is considered a valuable plant on the native stock ranges."

31325. CITRUS DECUMANA (L.) Murr. Pomelo.

From Seharunpur, India. Presented by Mr. William Gollan, February 25, 1904, who was the superintendent of the Botanic Gardens. Numbered June 21, 1911.

"This plant is from one of six scions that were received by the Office of Pomology. The scions were said to comprise three of the best pomelos of India. Nothing more definite than this is known regarding the variety of this tree." (*R. A. Young.*)

31326. MAURITIA SETIGERA Griseb. and Wendl.

From La Brea, Trinidad, British West Indies. Presented by Mr. W. G. Freeman, Acting Director of Agriculture, Port of Spain, Trinidad. Received June 21, 1911.

Distribution.—A gregarious palm, forming the greater part of the vegetation in the swampy parts of the island of Trinidad.

31327. IPOMOEA BATATAS (L.) Poir. Sweet potato.

From Auckland, New Zealand. Purchased from Rev. J. H. Simmonds, through Mr. T. W. Adams, Greendale, Canterbury, New Zealand. Received at the Plant Introduction Garden, Chico, Cal., June 7, 1911.

31328. EUGENIA DOMBEYI (Sprengel) Skeels. Grumichama.

From Rio de Janeiro, Brazil. Presented by Mr. A. A. Pereira da Fonseca. Received June 23, 1911.

See No. 30040 for previous introduction.

31329. COLOCASIA sp. Dasheen.

From Mukden, Manchuria. Presented by Mr. E. C. Parker, Bureau of Agriculture, Industry, and Commerce. Received June 21, 1911.

"The tubers are similar in general character to the usual Japanese type of dasheen. The flesh is nonacid when raw and when cooked is rather firm in texture and whitish, but has little flavor." (*R. A. Young.*)

31330 to 31352.

From Tcharjui, Russian Turkestan. Presented by Mr. V. A. Paletsky, at the request of Mr. Frank N. Meyer, agricultural explorer. Received through Alexander Heingartner, American consul, Batum, Russia, June 21 and 22, 1911.

Seeds of the following; quoted notes by Mr. Paletsky:

31330. AMMODENDRON CONOLLYI Bunge.

"Collected on drift sands at Repetek, near Tcharjui, Russian Turkestan. A sand binder."

Distribution.—A silvery leaved shrub growing on the shifting sands of the Kizil-Kum Desert near the Aral Sea in central Turkestan.

31331. CALLIGONUM CAPUT-MEDUSAE Schrenk.

"Found on the drift sands near the railway at Farad, near Tcharjui."

See No. 28974 for description.

31332. HALOXYLON AMMODENDRON (C. A. Meyer) Bunge. Saxaul.

"Collected on drift sands at Repetek, near Tcharjui."

See No. 28976 for description.

31333. MEDICAGO SATIVA L. Alfalfa.**31334. SALSOLA ARBUSCULA Pallas.**

"Native throughout Circassia. Collected on drift sands at Farad railway station."

See No. 28973 for description.

31335 to 31352. CUCUMIS MELO L. Muskmelon.

From the Tcharjui dunes.

31335. *Ak Beshek.*

31336. *Ananasnaia Koshkarskaia.*

31337. *Azgik.*

31338. *Emirskaia.*

31339. *Gokcha.*

31340. *Guloka.*

31341. *Karakatukh.*

31342. *Khoddja Murash*, in taste one of the best from the Tcharjui dunes.

31343. *Kokani.*

31344. *Megesek.*

31330 to 31352—Continued.**31335 to 31352—Continued.****31345.** *Riri Gullik.***31346.** *Saraksi.***31347.** *Zagrakesh.***31348.** *Zami Bucharskaia.***31349.** *Zami Dekani Yrganchi.***31350.** *Zami*, small, early.**31351.** *Zarakigia*, with fragrant sweet juice.**31352.** For all qualities one of the best of the Tcharjui dunes. Exported very largely into European Russia. Keeps until April.**31353. GONOCITRUS ANGULATUS (Willd.) Kurz.**

From Buitenzorg, Java. Presented by the director, Department of Agriculture.

Received June 22, 1911.

Distribution.—In marshy places on the island of Kambangan near the southern coast of Java.**31354. MANGIFERA MACROCARPA Blume.**

From Buitenzorg, Java. Presented by the director, Department of Agriculture.

Received June 15, 1911.

Introduced for the work of this office in testing new and hardier stocks for the mango.

Distribution.—Known only from the island of Java.**31355 to 31358.**

From Taihoku, Formosa. Presented by Mr. G. Takata, Chief of Bureau of Industry, Formosan Government, at the request of Mr. K. Haga, expert, Bureau of Industry. Received May 10, 1911.

Cuttings of the following:

31355. *VITIS VINIFERA L.***Grape.**

These are reported to be from vines bearing fruit of unusually high quality for tropical grapes.

31356 to 31358. *CITRUS* spp.**31356.** *Ponkan.***31358.** *Tankan.***31357.** *Sekkan.***31359. PSIDIUM GUAJAVA L.****Guava.**

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received June 22, 1911.

"A native of South America and cultivated from Buenos Aires to Mexico. In Paraguay it grows wild in great profusion. Will resist cold to the same degree as oranges." (*Mead.*)**31360. CASTILLA LACTIFLUA O. F. Cook.****Central American rubber.**

From Tapachula, Mexico. Presented by Mr. C. A. Leshner, Zacualpa Rubber Plantation. Received June 23, 1911.

Distribution.—The region in the southern part of Mexico in the vicinity of Soconusco and Tapachula.

31361. PERSEA AMERICANA Miller.**Avocado.**

From Chile. Received through Mr. José D. Husbands, Limavida, Chile, June 26, 1911.

"There are two and perhaps three classes in this lot, having green and black-purple skins like some eggplants. They are very highly esteemed and very expensive. These cost me \$6 per dozen, Chile money, or \$3 gold. They find a ready sale at these high prices. May be shipped when nearly ripe and ripen upon the journey or afterwards. I purchased these, and the friend who sent them ate the fruit for his trouble. They are delicious eaten with salt and pepper and as a salad for breakfast, lunch, dinner, or at any time. Liked better than olives.

"Up to the year 1854 paltas were not considered a comestible fruit and in no way appreciated except as an ornamental tree. The black paltas of Quillota were considered unfit for food for many years afterwards, but now the variety is held in the highest esteem. It is believed to have originated from accidental crossing in the gardens of Quillota with wild Peruvian varieties. In the station of this city one sees paltas offered for sale of many colors, sizes, and shapes: Green, brown, red, russet, etc." (*Husbands*.)

31362. DYERA COSTULATA (Miq.) Hook. f.

From Lawang, Java. Presented by Mr. M. Buysman, Botanic Garden. Received June 19, 1911.

"A Sumatra tree, which produces a surrogate for caoutchouc. A company for the manufacture of articles of this gum is to be formed at Surabaya with a capital of several million florins." (*Buysman*.)

Distribution.—An apocynaceous tree found in Sumatra and other Malayan islands.

31363. DOLICHOS LABLAB L.**Bonavist bean.**

From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received June 27, 1911.

Stringless.

31365. (Undetermined.)**Kiffy.**

From Liberia, Africa. Procured from Mr. Henry Stewart through Mr. G. N. Collins. Received June 23, 1911.

"A cucurbitaceous plant. The seeds of this plant when parched and ground produce a delicious condiment. Kiffy seed is an important ingredient in the popular Liberian dish *dumboy*. The flavor of the parched seed is similar to that of the parched seeds of *Sesamum indicum* which are used in the same way by the natives of Liberia.

"The gourdlike fruits, about the size and shape of a goose egg, are produced on vines like the ordinary gourd. The method of securing the seeds practiced by the Liberians is to macerate the fruits in water and wash them free from the pulp. The season required for maturing the fruit is probably too long to permit the plant being grown anywhere in this country except in the extreme South." (*Collins*.)

31366. EUGENIA sp.

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received June 28, 1911.

"This is called in Guarany *ñangapiri*. Fruit found in the mountains of Paraguay. In size and color same as May Duke cherry; tree also grows to the same height and shape as the one producing this fruit; contains from 1 to 3 seeds and has a button on the bottom similar to the quince. It is beautiful to look at, but the taste is nothing wonderful according to my palate. Tree is found only inside of the forest in shade, so it can not be very resistant to frost." (*Mead*.)

31367. PHORMIUM TENAX Forst.**New Zealand flax.**

From Gore, South Island, New Zealand. Presented by Mrs. Alexander Graham Bell. Received May 8, 1911.

31368 and 31369. TRITICUM AESTIVUM L.**Wheat.**

From the Hoggar region, Algeria. Presented by Dr. L. Trabut, Algiers, Algeria. Received June 28, 1911.

Seeds of the following; quoted notes by Dr. Trabut:

31368. "Wheat, stiffly barbed."

31369. "Wheat, stiffly one-half barbed."

"This wheat was received from among the Hoggar Tuaregs. It is cultivated with the aid of irrigation and in very soft places."

31370. CAPRIOLA DACTYLON (L.) Kuntze.**Bermuda grass.**

From Lucknow, India. Presented by Mr. H. J. Davis, superintendent, Government Horticultural Gardens, at the request of Rev. N. L. Rockey, Gonda, United Provinces. Received June 28, 1911.

Native name *Doob* grass.

NOMENCLATURAL NOTES AND PUBLICATION OF NEW NAMES.

- 30495. SPONDIAS CYTHEREA Sonnerat.
- 30498. WARNERIA AUGUSTA Stickman.
- 30662. ALHAGI PSEUDALHAGI (Bieb.) Desv.
- 30721. VIGNA SINENSIS (Torner) Savi.
- 30742. ANACARDIUM EXCELSUM (Bertero and Balbis) Skeels.
- 30758. SCHIZONOTUS AITCHISONI (Hemsl.) Skeels.
- 30761. CAJUPUTI HYPERICIFOLIA (Salisb.) Skeels.
- 30795. CAJUPUTI PUBESCENS (Schauer) Skeels.
- 30993. CIRCINNUS CIRCINATUS NUMMULARIUS (DC.) Skeels.
- 31115. PHYTELEPHAS SEEMANNI O. F. Cook. n. sp.
- 31244. BERBERIS JAPONICA BEALEI (Fortune) Skeels.
- 31317. ERYTHRINA POEPPIGIANA (Walp.) Skeels.

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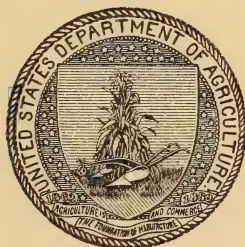
B. T. GALLOWAY, *Chief of Bureau.*

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., March 16, 1912.

SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 248 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from July 1 to September 30, 1911: Inventory No. 28; Nos. 31371 to 31938."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

B. T. GALLOWAY,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.

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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1911: INVENTORY NO. 28; NOS. 31371 TO 31938.

INTRODUCTORY STATEMENT.

This twenty-eighth inventory of seeds and plants imported contains 20 per cent more material than the inventory covering the same period of last year and includes 668 introductions.

It contains some interesting plants collected by Mr. Frank N. Meyer in Chinese Turkestan during the winter of 1910 and the spring of 1911. These months were spent by Mr. Meyer in exploring the oases of Chinese Turkestan south of the Tien Shan Range and in crossing over this range to Chugutchak, Mongolia. Of the dangers of travel in this country Mr. Meyer himself will probably be given an opportunity to tell in a later publication. Certainly they were great enough to make the material secured of very unusual value.

Part of the collections made by Mr. C. V. Piper during his study of the forage-crop situation in the Philippines is also included. His collections from the Dutch East Indies and British India, where he traveled as an agricultural explorer, will be described in future inventories.

Experimenters living in the Northern States will probably be interested in the collection of winter wheats which Mr. Meyer secured in Chinese Turkestan (Nos. 31780 to 31791); in four varieties of hull-less barley from which the natives of Chinese Turkestan make bread (Nos. 31793 to 31796); in alfalfa varieties from Khotan, Kashgar, and Khanaka, one of which has the ability to grow in cool weather when other sorts have stopped growing (Nos. 31811 to 31815); in a variety of alfalfa from Chugutchak, Mongolia, which is said by the growers there to be much hardier than the Turkestan alfalfa, though giving only two cuttings, whereas the Turkestan gives three, but while one-third of the plants of the Turkestan alfalfa were winterkilled none of the Mongolian variety was injured (No. 31687); in a hardy wild apple found by Mr. Meyer at Kulja, Chinese Turkestan, which may prove of value for breeding purposes (No.

31688); in the oleasters from this same region, which are among the hardiest and generally most useful trees known for dry, cold countries (No. 31822); in some winter radishes for midsummer planting (No. 31697); and in four Mongolian wild roses with characters which may make them valuable for breeding purposes (Nos. 31692 to 31695).

Experimenters in the Gulf States will be interested to learn of the introduction from the Hawaiian Islands of a species of cotton entirely new to this country (No. 31680). This is a good-sized tree with large scarlet flowers, and seeds with a remarkable short brown lint on them. Only a few trees are in existence and these will be carefully guarded to prevent this very striking relative of our cotton plant from becoming extinct and forever precluding the possibility of hybrids being made between it and the cultivated species.

The attention of the same experimenters in the South is called to a collection of grasses made by the New Zealand Government for the purpose of regrassing the denuded areas of South Island (Nos. 31489 to 31509); to a collection of apple varieties resistant in the mild climate of New Zealand to the woolly aphis (Nos. 31511 to 31536); to a new chance seedling plum of the Satsuma type (No. 31652) and a new variety of subtropical apple from Natal (No. 31653); to seven distinct varieties of the New Zealand flax which are reported to be superior fiber producers (Nos. 31884 to 31890); to six varieties of the sweet potato which have been either developed by the Maoris of New Zealand or brought, according to their tradition, from the Hawaiian Islands by their ancestors (Nos. 31908 to 31913); and to nine varieties of rice from Chinese Turkestan (Nos. 31823 to 31832), one of which is said to ripen its grain 10 weeks after sowing.

To those whose experimental gardens lie south of the zone of severe freezes some of the following introductions may appeal, for, although many of them are reported to be strictly tropical, their ability to grow farther north than the latitude in which they were discovered remains to be determined.

The success of the Carissa as a hedge and fruit plant has made it seem advisable to get other species of the same genus from Natal (Nos. 31840 and 31841). The awakening of subtropical horticulturists to the value of the avocado has led to the introduction of the best varieties of "paltas" from Quillota, Chile (No. 31631), and five different forms from various localities in Costa Rica and Guatemala (Nos. 31375, 31376, 31478, 31614, and 31616), while the introduction of the new species *Persea pittieri* (No. 31928) should interest particularly those who have begun to improve this new fruit plant by breeding and selection.

Since the days of Capt. Cook the seedless breadfruits of Tahiti have been famous, but the culture of these seedless forms, which are

baked and eaten as a vegetable, seems not to have spread very widely through the Tropics. The introduction of cuttings (No. 31378) may therefore stimulate an interest in this tree, which has so much of tropical romance connected with it.

Ten varieties of tropical yams (*Dioscorea* spp., Nos. 31914 to 31923) from Port Moresby, New Guinea, may add some valuable strains to the collections of West Indian forms; two interesting mangos from Tahiti (Nos. 31379 and 31380) are added to the hundred or so varieties which compose the Florida collections.

Mr. Piper calls attention to the uses of the Nipa palm as a plant for trial in the brackish swamps of southern Florida (No. 31556) and reports on the quality of the fruit of the wampee from Canton, China (No. 31730), which, while it is one of the commonest fruits of South China, is little known in Florida or Porto Rico. The cajuput tree of New South Wales (No. 31736) has made a remarkable growth on the shores of Florida and promises to be a most valuable tree for that region, and the further introduction of seed will be of interest to those who are studying the forest problems of that State.

The lacquer tree of China and Japan is a relative of our poison ivy and is quite as poisonous to some people, but the remarkable character of the sap, which is different from the paint oils or varnishes in use in this country, makes its culture worthy of the consideration of chemists. The drying process is not a simple oxidation phenomenon, but it depends on the action of enzymes upon albuminoids in the presence of an organic acid, and, as the product, lacquer, is one of the most durable and perfect wood coatings known, it would seem worth while to find ways by which it can be handled by painters. The introduction of the crude lacquer and seeds of the lacquer tree (No. 31639) are for the purpose of interesting the paint and varnish makers of this country.

The extensive employment in India of the juice of a certain tropical persimmon, when mixed with charcoal, as a coating for the planks of boats has made it seem worth while to add this species to our collection of *Diospyros* (No. 31488).

To those who wish to test new forms in their gardens, the narras from Walfisch Bay, a dune-forming, thorny cucurbitaceous plant (No. 31401) which produces fruits upon which the Hottentots live and thick nutlike seeds which are used in South Africa as a substitute for almonds, will perhaps be of interest; or one of Mr. Piper's introductions from the Philippines, a vine with beautiful globose smooth red fruits as large as an orange (No. 31588); or the pacuri of Paraguay, a plant as frost resistant as the orange, which bears edible fruit (No. 31872).

As heretofore, the manuscript for this inventory has been prepared by Miss Mary A. Austin, and the botanical determinations have been made and the notes on geographic distribution arranged by Mr. H. C. Skeels, under the supervision of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations. The general supervision of this inventory, as of all the publications of this office, has been in the hands of Mr. Stephen C. Stuntz.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., February 19, 1912.

INVENTORY.

31371. *XANTHOSOMA* sp.

Yautia.

From Monte Cristi, Dominican Republic. Procured by Mr. Frederick L. Lewton, of the Bureau of Plant Industry. Received July 1, 1911.

"These tubers were obtained by Mr. Lewton on the market under the name of yautia. They are oblong in form, one specimen being 6 inches in length and $2\frac{1}{4}$ inches in greatest diameter, with a weight of 10 ounces. The sprouts are pink or reddish. The flesh is white and nonacrid; when cooked it becomes slightly purplish and is moderately firm. The flavor is rather inferior." (R. A. Young.)

31372. *XANTHOSOMA* sp.

Yautia.

From Port au Prince, Haiti. Procured by Mr. Frederick L. Lewton, of the Bureau of Plant Industry. Received July 1, 1911.

"The tubers of this variety were obtained on the market under the name of *Malanga* by Mr. Lewton. They are roundish in general form, some specimens being about $2\frac{1}{2}$ by 3 inches in size and weighing 5 to 6 ounces. The sprouts are reddish in color. The flesh is acrid when raw, but the acidity is destroyed by boiling for 35 or 40 minutes. The flesh is very firm when cooked and is of fair flavor." (R. A. Young.)

31373. *IPOMOEA BATATAS* L.

Sweet potato.

From Broadwood, New Zealand. Presented by Mr. George Harris, at the request of Mr. T. W. Adams. Received at the Plant Introduction Garden, Chico, Cal., June 28, 1911.

"Kumaras."

31374. *INOCARPUS EDULIS* Forst.

Tahiti-chestnut.

From Tahiti, Society Islands. Procured by Mr. North Winship, American consul. Received July 1, 1911.

"O Tahiti-chestnuts come from what is considered the best tree on this island. The nut should be planted about 4 or 5 inches deep, good loamy soil preferred, in the place where the tree is desired. It is of slow growth, but makes a beautiful tree, growing to great size and yielding abundantly. Keep the seed and the young plant damp, but not wet." (Winship.)

"These seeds are much prized by the natives as food, being eaten boiled or roasted. They are said to be less palatable than the chestnut." (Fairchild.)

31375 and 31376. *PERSEA AMERICANA* Miller.

Avocado.

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé. Received July 3, 1911.

Seeds of the following:

31375. "Broad oval."

31376. "Long, but without neck or stem."

"These are seeds of large, very thick-fleshed and very good varieties. They are about the best that come to the market. Plain green." (Wercklé.)

31377. ENTELEA ARBORESCENS R. Br.**Whau.**

From Tauranga, New Zealand. Presented by the Tauranga Fruit-Testing Station, Department of Agriculture, New Zealand. Received July 3, 1911.

See No. 30833 for description.

31378. ARTOCARPUS COMMUNIS Forst.**Breadfruit.**

From Tahiti, Society Islands. Presented by Mr. North Winship, American consul. Received at the Plant Introduction Garden, Chico, Cal., June 22, 1911. Forwarded to Washington, D. C., and received June 27, 1911. Numbered July 6, 1911.

"These cuttings should be planted in loamy soil, the top of the stalk being closed to prevent insects from entering, and the plant should be protected from the midday sun until it shows signs of life. This is a very fine variety of the Tahiti breadfruit, being about the size of a grapefruit and without seed." (*Winship.*)

31379 and 31380. MANGIFERA INDICA L.**Mango.**

From Tahiti, Society Islands. Procured by Mr. North Winship, American consul. Received at the Plant Introduction Garden, Chico, Cal., June 22, 1911. Numbered July 6, 1911.

Plants of the following; quoted notes by Mr. Winship:

31379. "*Superba* Hook. This gives a fine large fruit, heavy and almost round; its color is yellowish golden."

31380. "*Altissima* Blanco. This is practically the same as the preceding, possibly longer and more pointed at the bottom; its color is pink or red, sometimes with a violet hue."

"Both of these fruits are less fibrous than the other mangos found here, and are very luscious. These trees begin to bear with the commencement of the rainy season. It is thought that both of these varieties came originally from India."

These two were sent in as *Mangifera superba* and *M. altissima*, respectively, though they are now considered merely as forms of *M. indica*.

31381. PERSEA AMERICANA Miller.**Avocado.**

Secured on the market at Laredo, Tex., by Dr. David Griffiths, of the Bureau of Plant Industry, June, 1911. Received July 5, 1911.

"A Mexican avocado, the only one of the kind found. Brownish black in color. The outer skin hard, rather brittle, and easily peeled off from the edible flesh. Flavor good, flesh firm." (*Griffiths.*)

31383. ROLLINIA sp.

From Piracicaba, Brazil. Presented by Mr. Clinton D. Smith, Fazenda Modelo do Estado de São Paulo. Received July 7, 1911.

"Variety *Cabeça de Negro*. The natives call this fruit *araticu*." (*Smith.*)

31384 to 31388.

From the vicinity of Chungking, China. Presented by Mr. Albert W. Pontius, American consul. Received June 27, 1911.

Seeds of the following; quoted notes by Mr. Pontius:

31384. HORDEUM VULGARE L.

Barley.

Bearded.

31385. HORDEUM VULGARE var.

Barley.

"Black. Considered superior. Not raised extensively."

31384 to 31388—Continued.**31386.** HORDEUM VULGARE var.**Barley.**

Beardless.

"All three of these varieties are planted in the beginning of November, the crop ripening in early May following. They are chiefly used in the manufacture of wine spirits, very little being used as human or animal food."

31387. BRASSICA NAPUS L.**Rape.**

"Black. This variety grows to a height of about 3 feet and ripens in April or May. The oil obtained from the seed is dark in color."

31388. BRASSICA JUNCEA (L.) Cass.

"Yellow. This variety grows to a height of about 5 feet and ripens in April or May. The oil extracted from the seed is of a light color."

31389 and 31390. FEIJOA SELLOWIANA Berg.

From California. Presented by Mr. H. Hehre, Los Angeles, Cal., who procured them from the garden of Mrs. Ingraham. Received November, 1910. Numbered for convenience in recording distribution July 10, 1911.

Plants grown from seed received on the foregoing date:

31389. "Variety *Hehrei*. This large, long fruit was originated by me years ago by selection and crossbreeding. It gets to be 3 inches in length by 2 inches in diameter, has smooth skin, and is of good flavor." (*Hehre*.)

31390. A short, round variety.

See Nos. 26120 and 26121 for general notes on this fruit.

31391. PINUS ELDARICA Medw.**Pine.**

From Tiflis, Caucasus, Russia. Presented by Mr. A. Rolloff, director, Botanic Garden. Received July 10, 1911.

Distribution.—On the rocky slopes of the valleys of the streams in the dry, central region of the Trans-Caucasian provinces of southeastern Russia.

31392. ANACARDIUM OCCIDENTALE L.**Cashew.**

From Maulmain, Lower Burma, India. Procured from the Deputy Commissioner at Maulmain, by Mr. M. K. Moorhead, American consul, Rangoon, Burma, at the request of the consul general at Calcutta. Received July 10, 1911.

"Cashew nuts are the kidney-shaped nuts of the *Anacardium occidentale*, known in Burmese as *Thiho-thayet-si* (seeds of the *Thio-thayet*, 'Ceylon mango'). The tree, of which there is only one variety in Burma, was originally introduced from Brazil, where it is known as *Acaju* (hence the Portuguese *Cajew* and the English *Cashew*). It is planted commonly on roadsides and in fruit gardens in Maulmain, Amherst district, and in Tavoy and Mergui districts. It has run wild in the sandy coast forests of western India, chiefly on the borders of the backwaters of Travancore. It is propagated in India and Burma by sowing the nuts and not yet by grafting or other methods, though these admit of being applied to it." (*Mr. J. Mackenna, Director of Agriculture, Burma.*)

31393. CEIBA PENTANDRA (L.) Gaertner.**Kapok.**

From Buitenzorg, Java. Presented by the Director of Agriculture. Received July 11, 1911.

"A high tree, 20 to 30 meters [65 to 100 ft.], with spreading horizontal branches. The cotton covering the seeds is used in making beds and pillows. The wood is white and soft, but in Porto Rico is considered desirable for minor building purposes, such

as inside partitions. The leaves are palmately divided, like those of the horse-chestnut, and it is sometimes called the 'five leaves silk cotton' to distinguish it from Ochroma and others which produce a silky fiber. The trunks of young trees of this species are beset with large, conical spines, but in age these fall away and are to be found only on the branches. The trunk is further transformed by the growth of prominent wings or buttresses, sometimes 2 feet (0.6 meter) wide, while but a few inches thick. In west Africa, where this tree is larger and more luxuriant, pieces of these supporting wings are sawed out and used as doors of native houses. The fiber surrounding the seeds of this and related species is the 'Kapok' of commerce, and is exported in considerable quantities from the west coast of Africa." (*Cook and Collins. Economic Plants of Porto Rico, 1903, p. 111.*)

"'Kapok' has come into use very largely in certain European countries in recent years, notably in Germany and Holland, as a material for stuffing cushions, pillows, chairs, bedding, and similar articles. For such purposes its nonhygroscopic character and its softness and resiliency render it peculiarly suitable. It is also stated to be less absorbent and less liable to harbor insect parasites than the materials generally employed in upholstery, and, according to the authorities of the Pasteur Institute in Paris, it can be sterilized by heat at least three times without being seriously damaged, whereas feathers and other upholstery materials do not usually survive this treatment more than twice." (*Indian Vegetable Flosses or "Silk Cottons." Bulletin of the Imperial Institute, vol. 3, 1905, p. 223.*)

Distribution.—A tall tree found in the forests throughout the warmer parts of India and Ceylon; also in tropical Africa, the West Indies, and South America.

31394. *CRYPTOMERIA JAPONICA* (L. f.) D. Don.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received July 8, 1911.

See No. 2922 for description.

31395 and 31396.

From Foochow, China. Presented by Mr. T. M. Wilkinson. Received July 5, 1911.

Seeds of the following; quoted notes by Mr. Wilkinson:

31395. *MEDICAGO LUPULINA* L.

Black medick.

"A clover with low-growing stems, inclined to lie along the ground and take root at joints. Starts in new places like white clover. Leaf about the size of white clover. Blossom yellow; seed grows on stem something like alfalfa instead of in head like red or white clover. It may be well to experiment with it carefully, for if it is not found to be of value as a forage or pasture plant it may prove to be as much of a pest as the sweet clover is in some of the States."

31396. *TRITICUM AESTIVUM* L.

Wheat.

"This is planted here the last of November and December; it grows during the rainy season and ripens during the humid spring season. Seems to be rust-proof and does not blight easily. Straw quite stiff and strong. May prove to be a valuable variety of winter wheat for the Southern States."

31397. *CAPSICUM* sp.

Red pepper.

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received July 12, 1911.

"Called in Guarany *Kucii*. A very small and very strong pepper, a good rival for, if not stronger than, the tabasco pepper. Found growing wild in the mountains of Paraguay, but I know nothing of the plant or habit of its growth, as the seeds were procured for me by Indians near the yerbales of Alta Parana." (*Mead.*)

31398 to 31400. NICOTIANA TABACUM L.**Tobacco.**

From the Isthmus of Tehuantepec, Mexico. Presented by Mr. Lewis W. Haskell, American consul, Salina Cruz, Mexico. Received July 12, 1911.

Seeds of the following; quoted notes by Mr. Haskell:

31398. "I am told that this sample will show three classes:

"(1) *Criollo*, which grows 3 feet or more in height, with about 30 leaves to the flower. From 20 to 24 would be left after topping. Length of leaf 40 to 60 centimeters and a proportionate width, coming to a point. Coarse vein, dark color, and poor quality.

"(2) *Criollo*, which grows about the same size and shape as the above but of a great deal finer quality. Small vein, fine leaf, light weight. Color, colorado or colorado maduro. This is the class largely used in Valle Nacional and San Andres Tuxtla and is much esteemed for its size of leaf and its softness or fineness. It is mixed with the first mentioned to 'add weight.'

"(3) *Cubano* or *Habanero*, which grows somewhat larger than the above, but the leaves are more widely separated and there are but from 14 to 18 left at topping. Leaves almost round; color colorado claro or claro. Is of very fine texture and light weight."

31399. "This came from Acayucan and is the ordinary kind raised there. Acayucan is located on the Isthmus of Tehuantepec, and is in the State of Vera Cruz."

31400. "As to this variety, the natives hereabouts do not distinguish, so all I can say for it is that it is tobacco seed. It comes from the vicinity of Modias Aguas on the Tehuantepec National Railway, which is situated on the Gulf slope of the Isthmus. No tobacco is grown on this, the Salina Cruz side of the Isthmus."

31401. ACANTHOSICYOS HORRIDA Welw.**Narras.**

From Walfisch Bay, Africa. Presented by Mr. Richard Hörnig, Farm Sachsen, Tsumeb, German Southwest Africa. Received July 8, 1911.

"A plant belonging to the same family as the squash, which it somewhat resembles. It is an important dune former, and continues to grow with the increasing height of the dune, so that its younger shoots remain at the surface, forming a dense, thorny shrub, while the root system penetrates to a considerable depth, tapping the underground water and securing such a supply that drops exude and fall from the cut ends of assimilating stems.

"Old stems buried in the accumulating sand become as stout as one's arm and ensheathed in a thick layer of corrugated cork, obviously serving in part as water storers. The plant is unisexual and each dune apparently contains a single individual, for the two sexes are never found together.

"Flowering commences in November and by the middle of February the female plants produce ripe fruits, which are borne in great profusion, and for about four months in the year render the Hottentots independent of other sources of food and, to a large extent, of water also. The fruits are spheroidal in shape and about 9 inches in diameter. The juicy yellow flesh is much relished by the natives, who consume large quantities of it while fresh and lay by a store for winter use in the form of hard, flat cakes obtained by evaporation. Its food value is attested by their fat and sleek appearance during the narras season.

"The faculty of enjoying the juice evidently has to be acquired, for it has a sweet, sickly flavor and contains an acid principle very irritating to the tongue and palate of those unaccustomed to it; it is said that at the end of the narras season the lips of even the habitual consumers are swollen and inflamed. The seeds, which somewhat

resemble those of the squash, are very nutritious and were formerly exported to Cape Town under the name of 'butternuts,' where they found a market among the native population and were also used by Europeans as a substitute for sweet almonds." (*Pearson, Notes on a Journey from Walfish Bay to Windhuk, Kew Bulletin of Miscellaneous Information, No. 9, 1907, p. 342, figs. 1 and 2.*)

Distribution.—In the desert regions near the west coast of Africa from the vicinity of Mossamedes southward to Namaqualand.

31402. CANNA sp.

Canna.

From the forests around El Boquete, Chiriqui, Panama, at an altitude of 3,250 to 4,250 feet. Presented by Mr. H. Pittier, collector, Smithsonian Biological Survey of the Panama Canal Zone. Received July 13, 1911.

31403. NICOTIANA TABACUM L.

Tobacco.

From Jocoto, Guatemala. Presented by Mrs. Lucie Potts, Livingston, Guatemala. Received July 12, 1911.

31404. CASTANEA CRENATA Sieb. and Zucc.

Chestnut.

From Japan. Procured by Mr. Thomas Sammons, American consul general, Yokohama, Japan, who secured them through the Agricultural Experimental Farm at Aomori, Mr. H. Iwaya, of the village of Shinjomura, Higashitsuruga-Gori, near Aomori, having gathered the same by special request. Received December 27, 1910. Numbered for convenience in recording distribution July 14, 1911.

Aomori.

31405. CRYPTOCARYA RUBRA (Mol.) Skeels.

Peumo.

From the province of Valparaiso, Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile. Received June 22, 1911.

See Nos. 23897, 24310, and 27904 to 27924 for previous introductions.

31406 to 31409. CITRUS spp.

From Buitenzorg, Java. Presented by Mr. H. Wigman, jr., assistant director, Botanical Garden. Received July 10, 1911.

Seeds of the following; native names quoted:

31406. CITRUS sp.

"*Djeroek tjina konde.*"

31407. CITRUS DECUMANA (L.) Murr.

Pomelo.

"*Djeroek delima.*"

31408. CITRUS DECUMANA (L.) Murr.

Pomelo.

"*Djeroek pandan.*"

31409. CITRUS NOBILIS Lour.

31410. CASTILLA ELASTICA Cerv.

Central American rubber.

From Tula, Vera Cruz, Mexico. Presented by Mr. A. D. Patchen. Received July 15, 1911.

Introduced in order to encourage the growing of the various rubber trees in Porto Rico, Hawaii, and the Canal Zone.

31411 to 31464. SOLANUM TUBEROSUM L.**Potato.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, June 22, 1911.

Tubers.

31465. MEDICAGO HISPIDA APICULATA (Willd.) Urban.

From Jeolikote, United Provinces, India. Presented by Mr. Norman Gill, superintendent, Kumaon Government Gardens, Douglas Dale, at the request of Rev. N. L. Rockey, Gonda, United Provinces. Received July 14, 1911.

31466. CHRYSANTHEMUM CINERARIAEFOLIUM (Trev.) Vis.**Chrysanthemum.**

From Erfurt, Germany. Purchased from Haage & Schmidt. Received July 10, 1911.

Introduced for the work of the Office of Drug-Plant Investigations in growing in the United States the various species of this genus which produce the pyrethrum insect powder.

31467. MEDICAGO SATIVA L.**Alfalfa.**

From Quetta, India. Secured by Mr. F. Booth Tucker, Salvation Army, Simla, India, from Mr. G. H. Frost, subconductor, Military Farm, Quetta. Received July 10, 1911.

31468. MAURITIA SETIGERA Griseb. and Wendl.**Morichy.**

From La Brea, Trinidad, British West Indies. Presented by Mr. H. Caracciolo, St. Joseph Nurseries. Received July 19, 1911.

"A handsome palm growing about the asphalt beds of La Brea. The seeds ripen in May and could readily be gathered, as the palm is abundant locally." (*Oglesby Paul.*)

See No. 31326 for distribution of this species.

31469. FICUS PSEUDO-CARICA Miquel.**Fig.**

From Eritrea, East Africa. Presented by Prof. T. Batorate, director, Colonial Agricultural Experiment Station, Asmara, through Mr. Walter T. Swingle. Received July 19, 1911.

"A native fig introduced for use in the fig-breeding work of the Office of Crop Physiology and Breeding Investigations. This species occurs commonly in a wild state in Eritrea and Abyssinia and bears small but edible fruits. We already have it in California and it promises to be important in supplying early Blastophaga with pollen to caprify the spring crop of figs." (*W. T. Swingle.*)

31470 to 31473.

From Honduras. Presented by Dr. R. Fritzgartner, Tegucigalpa. Received July 19, 1911.

Seeds of the following; quoted notes by Dr. Fritzgartner:

31470. CASIMIROA SAPOTA Oerst.

Matasano, or white sapote.

31471 to 31473. NICOTIANA TABACUM L.

Tobacco.

31471. "From Chimbo, 3,900 feet altitude."

31472. "From Santa Lucia, 4,800 feet altitude."

31473. "From Aurora, 5,000 feet altitude."

31474 and 31475. NICOTIANA TABACUM L.**Tobacco.**

From Cuba. Presented by Dr. E. F. Cabada, Cienfuegos. Received July 21, 1911.

Seeds of the following:

31474. "*Vuelta Abajo.*" From the district immediately west of the city of Pinar del Rio, province of the same name.

31475. "*Remedios.*" From the district surrounding the town of this name, province of Santa Clara.

31476. BRASSICA OLERACEA CAPITATA L.**Cabbage.**

From China. Brought in by Mr. G. Weidman Groff, of the Canton Christian College, July 22, 1911.

"*Wong nga paak.* An excellent Chinese cabbage with very long head, and when bleached like celery, of excellent flavor." (*Groff.*)

31477. MANGIFERA INDICA L.**Mango.**

From Piracicaba, Brazil. Presented by Mr. Clinton D. Smith, Escola Agricola Practica, Luiz de Queiroz. Received July 26, 1911.

"Grafts from our best tree. This variety is the *Espada* and is less stringy than the others, also has a larger proportion of pulp to pit." (*Smith.*)

31478 to 31481.

From San Jose, Costa Rica. Presented by Mr. C. Wercklé. Received July 17, 1911.

Seeds of the following:

31478. PERSEA AMERICANA Miller.

Avocado.

"*Palta* No. 1. Fruit large (390 grams [$13\frac{3}{4}$ oz.]), intense green, shortly pyriform-obovate; thick meat; highest quality. Weight of seed and skin 130 grams [$4\frac{1}{2}$ oz.]; meat alone 260 grams [9 oz.]. From Esparta, 300 to 600 feet above sea level." (*Wercklé.*)

31479 and 31480. LUCUMA spp.

Sapote.

31479. "Seed received as a very fine variety. I did not see the fruit, but know that it is *very* good. It is long and large despite the small seed; gray in color." (*Wercklé.*)

31480. "A splendid long sapote. Weighed about 1 pound; peculiar shape; very highly prized." (*Wercklé.*)

"A tree 30 to 40 feet high, with fulvous or gray branches, and long obovate leaves. The cream-colored silky flowers are borne in clusters on the stem. Fruit about 6 inches long, with reddish pulp, containing one or more polished seeds. The pulp is sweet and resembles in taste a luscious pear. It is made into a marmalade, which is said to be not unlike good apple preserve." (*Macmillan, Handbook of Tropical Gardening, p. 152.*)

31481. PERSEA AMERICANA Miller.

Avocado.**31482. PHYTOLACCA DIOICA L.****Ombú.**

From Buenos Aires, Argentina. Presented by Mr. Joseph E. Wing, agent of the Tariff Board. Received July 26, 1911.

"This tree does not withstand much frost. It is the common tree of the plains of Argentina and is seen making a dense green mound of verdure in the very dry soils, green during the worst droughts. I have seen them fully 12 feet in diameter; they

make extraordinarily rapid growth, and when cut down, immediately spring into life again, but do not sucker, the growth coming from the trunk. It is a tree much prized for growing near the home of the colonist or estanciero of the plains of Argentina." (*Wing.*)

31483. LINUM USITATISSIMUM L.

Flax.

From Hoshungabad, Central Provinces, British India. Presented by Mr. A. Howard, Quetta, British India, at the request of Mr. J. D. Shanahan, formerly of the Bureau of Plant Industry. Received July 26, 1911.

"As regards the oil-yielding capacity of this variety, I understand it is better than the country linseed, but I believe the yield of seed is less. It may, however, be of use in breeding. It is white seeded." (*Howard.*)

This form was secured at the request of this Office, as it is reported that the Indian white-seeded variety yields 2 per cent more oil than the ordinary dark linseed.

31484. FEVILLEA CORDIFOLIA L.

Cabalonga.

From Costa Rica. Brought in by Mr. José C. Zeledon, San Jose, Costa Rica, July 22, 1911.

"A vine suitable for covering trellises in hot countries, bears a fruit the size of an orange, is an antidote for snake bites, and would grow in Florida." (*Zeledon.*)

"The sequa or cacao antidote of Jamaica, where it is a common plant in shady woods, climbing to a great height up the trunks of trees. The fruits are 4 to 5 inches in diameter and contain from 12 to 15 large flat seeds which possess purgative and emetic properties and have an intensely bitter taste. In Jamaica the negroes employ them as a remedy in a variety of diseases and consider them to be an antidote against the effects of poison. They also obtain a large quantity of semisolid fatty oil, which is liberated by pressing and boiling them in water." (*Lindley, Treasury of Botany, pp. 490-491.*)

Distribution.—The West Indian islands and in northern South America, extending from Colombia and Peru southward to Chile.

31485 to 31487. ERIOBOTRYA JAPONICA (Thunb.) Lindl. **Loquat.**

From Rome, Italy. Presented by Mr. G. Eisen, San Francisco, Cal. Received July 27, 1911.

Seeds of the following; quoted notes by Mr. Eisen:

31485. "Fruit large, yellow, 2½ inches in diameter."

31486. "Fruit large, orange, 2½ inches in diameter."

31487. "Fruit pear shaped, 2 inches in diameter."

31488. DIOSPYROS PEREGRINA (Gaertn.) Gurke.

From Sibpur, near Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden, Sibpur. Received July 24, 1911.

"A dense evergreen tree found throughout the greater part of India in shady, wet places and near streams. It is frequently cultivated both for ornament and for its large, red, velvety fruits. The fruit is beaten in a large mortar and the juice expressed. This is boiled, mixed with powdered charcoal, and applied once a year to the outside of the planks of boats. The half-ripe fruits are pounded in a mortar and then kept six or seven days in water until they have decomposed. A gummy solution results, which is poured off. This brownish liquid is used in dyeing and tanning." (*Watt, Commercial Products of India, p. 498.*)

31489 to 31509.

From New Zealand. Presented by Mr. A. H. Cockayne, biologist, Department of Agriculture, Commerce, and Tourists, Wellington, New Zealand. Received July 27, 1911.

"These seeds were collected primarily in connection with the regrassing of denuded areas." (Cockayne.)

31489. *AGROPYRON SCABRUM* (R. Br.) Beauv.

Distribution.—Throughout the islands of New Zealand from sea level up to an elevation of 4,500 feet; also in Australia from Queensland to West Australia and Tasmania.

31490. *AGROSTIS DYERI* Petrie.

"This usually constitutes a large proportion of the subalpine pastures in elevated districts in both islands." (Cheeseman, *Manual of the New Zealand Flora*, 1906, p. 865.)

Distribution.—Mountainous districts at an elevation of 1,000 to 5,000 feet in the islands of New Zealand.

31491. *AGROSTIS* sp.

The seeds of this grass were received under the name *Agrostis tenella*, which was given to the species in 1889 by Petrie (Transactions of the New Zealand Institute, vol. 22, p. 442). However, in 1800, Hoffmann (Deutschlands Flora, ed. 2, vol. 1, p. 36) had published the name *Agrostis tenella* for a German form of *Agrostis alba*, thus invalidating the use of the same name for the New Zealand grass. As this species has apparently never been given any other name, it seems best to list the material at hand as *Agrostis* sp.

31492. *TRIODIA PUMILA* (Kirk) Hackel.

Distribution.—Mountainous districts of South Island in New Zealand at an altitude of 2,000 to 5,000 feet.

31493. *DANTHONIA BUCHANANI* Hook. f.

Distribution.—In the lake region of the South Island of New Zealand.

31494. *DANTHONIA CUNNINGHAMII* Hook. f.

Distribution.—A handsome grass, often 5 feet high, growing in the islands of New Zealand, ascending to an elevation of 3,500 feet.

31495. *DANTHONIA NUDA* Hook. f.

Distribution.—On the mountain slopes near the eastern coast of North Island, and in dry places among the mountains on the South Island of New Zealand.

31496. *DANTHONIA PILOSA* R. Brown.

Distribution.—The provinces of West Australia, Queensland, and New South Wales in Australia, and in Tasmania and the islands of New Zealand.

31497. *DANTHONIA RIGIDA* Raoul.

Distribution.—Abundant in hilly and mountainous districts up to an elevation of 5,000 feet in the islands of New Zealand.

31498. *CALAMAGROSTIS YOUNGII* (Hook. f.) Skeels.

(*Agrostis youngii* Hook. f. 1867, Handbook of the New Zealand Flora, p. 330.)

(*Deyeuxia youngii* Buchanan 1880. Manual of the Indigenous Grasses of New Zealand, p. vi.)

The seeds of this New Zealand pasture grass were received under the name *Deyeuxia youngii*. As *Deyeuxia* is not considered to be distinct from *Calamagrostis* and as this species is more closely related to the type of *Calamagrostis* than to the type of *Agrostis*, it is here placed in the former genus.

31489 to 31509—Continued.

31498—Continued.

Calamagrostis youngii was first found on dry hillsides at the source of the Waitaki River in the interior of the South Island of New Zealand, and Buchanan remarks regarding it: "In the district between the Clutha and Matamura rivers, Otaga, this grass is abundant and is much eaten by stock." (*Manual of Indigenous Grasses of New Zealand*, p. 61.)

31499. *FESTUCA OVINA* L.

31500. *FESTUCA RUBRA* L.

31501. *SAVASTANA FRASERI* (Hook. f.) Skeels.

(*Hierochloe fraseri* Hook. f. 1844-45, *Flora Antarctica*, vol. 1, p. 93.)

The seeds of this grass were received from New Zealand under the name *Hierochloe fraseri*. The generic name *Hierochloe* was published by R. Brown (*Prodromus*, p. 208) in 1810, with one species *H. antarctica*. In 1789, however, Schrank (*Baiersche Flora*, vol. 1, pp. 100, 337) had established the genus *Savastana*, with one species, *S. hirta*. This is universally considered to be congeneric with *Hierochloe antarctica* R. Brown. *Savastana* being the older name for the genus, our species is placed here in accordance with present rules of botanical nomenclature.

Savastana fraseri was first found on the slopes of the mountains in Tasmania, and also grows in the mountainous districts of the islands of New Zealand.

31502. *KOELERIA KURTZII* Hackel.

Distribution.—Abundant throughout the South Island of New Zealand, and also found in Argentina in South America.

31503. *POA AUSTRALIS* R. Br.

The seeds of this grass were received from New Zealand under the name *Poa caespitosa*, which was first used by Forster (*Prodromus*, p. 89) in 1786, but was not described. The first description of the species seems to be by Sprengel (*Mantissa Prima Florae Halensis*, p. 33) in 1807, who published the name *Poa caespitosa* and referred to Forster's *Prodromus*. However, in 1804, Poiret (*Encyclopédie Méthodique Botanique*, vol. 5, p. 73) had published the name *Poa caespitosa* for a grass now considered to be *Poa nemoralis* L. This invalidates the use of the name *Poa caespitosa* by Sprengel in 1807. The next name applied to this species is *Poa australis*, published in 1810 by R. Brown (*Prodromus*, p. 179), the name here used.

"The most abundant grass through wide districts in the South Island, also plentiful in the elevated central portions of the North Island. Unfortunately it is not relished by stock and is seldom eaten, save in the absence of better food. Also in Australia and Tasmania." (*Cheeseman, Manual of the New Zealand Flora*, 1906, p. 908.)

31504. *POA COLENSOI* Hook. f.

"This is one of the most important of the indigenous pasture grasses. It is eaten by all kinds of stock, and is a specially valuable sheep grass in mountain districts." (*Cheeseman, Manual of the New Zealand Flora*, 1906, p. 909.)

Distribution.—Mountain slopes and dry elevated plains rising to an elevation of 7,000 feet, in the islands of New Zealand.

31505. *POA KIRKII* Buchanan.

"This is a valuable grass for all kinds of stock in cool, elevated localities, and is well worth cultivation." (*Cheeseman, Manual of the New Zealand Flora*, 1906, p. 910.)

Distribution.—A variable grass, abundant on the subalpine plains and mountain slopes of the islands of New Zealand.

31489 to 31509—Continued.**31506.** *POA MANIOTOTO* Petrie.*Distribution.*—In the dry plains and broad river basins of the interior of South Island in New Zealand.**31507.** *POA* sp.**31508.** *TRIODIA PUMILA* (Kirk) Hackel.**31509.** *TRisetum ANTARCTICUM* (Forst.) Trin.*Distribution.*—Throughout the islands of New Zealand from sea level up to an elevation of 4,500 feet.**31510. LYCOPERSICON sp.****Tomato.**From Matachin, Chagres River, Canal Zone. Presented by Mr. S. P. Verner.
Received July 27, 1911."A native tomato." (*Verner.*)**31511 to 31536. MALUS SYLVESTRIS** Miller.**Apple.**

From New Zealand. Presented by Mr. W. C. Berridge, manager, Tauranga Experimental Farm, Fields and Experimental Farms Division, Department of Agriculture, Commerce, and Tourists. Received July 26, 1911.

Cuttings of the following aphis-resistant or aphis-proof apples:

"Most of the varieties have been proved to be proof against the ravages of the woolly aphis, but several have not yet been fully proved to be absolutely proof against it." (*Berridge.*)**31511.** *Carlton.***31522.** *Lady Hopetown.***31512.** *Cliff's seedling.***31523.** *Lord Wolseley.***31513.** *Coldstream Guards.***31524.** *Magg's seedling.***31514.** *Diadem.***31525.** *Sharp's late red.*

"Not yet proved."

31526. *Taupaki.***31515.** *Early Richmond.***31527.** *Willie Sharp.***31516.** *Edward Lippiatt.***31528.** *Wm. Anderson.***31517.** *Carrington.***31529.** *Yarrabank.*

"Not yet proved."

31518. *Golden Summer Pearmain***31530.** *Sharp's Summer.***31519.** *Irish Peach.***31531.** *Black Spy.*

"Not quite proof. An early variety."

31532. *Commerce.***31520.** *John Sharp.***31533.** *Mayflower.***31521.** *Jupp's Surprise.***31534.** *Sharp's Midseason.*

"Not yet proved."

31535. *Scarlet Queen.*

Early."

31536. *William H. E. Sharp.***31537 to 31547. SOLANUM TUBEROSUM** L.**Potato.**

From Chile. Received through Mr. José D. Husbands, Limávida, via Molina, Chile, April 29, 1911.

"Tubers of yellow-fleshed potatoes of wild origin, all from the south along the foothills of the first range of the Cordilleras." (*Husbands.*)

31548 to 31552. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

From India. Presented by Mr. E. J. Woodhouse, Department of Agriculture, Sabour, Bengal, India. Received July 26, 1911.

Seeds of the following:

31548. Chocolate variety.

31551. *Nepali*.

31549. Greenish yellow.

31552. Yellow.

31550. Black.

31553. CUPRESSUS GLABRA Sudworth. Cypress.

From Verde River Canyon, Ariz. Presented by Mr. George B. Sudworth, Forest Service, United States Department of Agriculture. Received July 29, 1911.

"Found on the north slopes in moist, rather rich, rocky soil. Elevation of 3,000 to 3,500 feet." (*Sudworth*.)

31554. EUCALYPTUS PATENTINERVIS R. T. Baker.

From Sydney, New South Wales, Australia. Presented by Mr. R. T. Baker, curator, Technological Museum. Received July 31, 1911.

"As the leaves of this tree exhale a pleasant odor it is recommended for park and street cultivation. The timber may be classed as a mahogany, being red, fairly hard, easily worked, and suitable for cabinet work." (*Baker*.)

Distribution.—A medium-sized tree found in the vicinity of Ballina in the north-eastern part of New South Wales, Australia.

31555. ASPARAGUS sp. Asparagus.

From Canary Islands. Presented by Dr. George V. Perez, Puerto Orotava, Teneriffe, who procured them from the head gardener of the Puerto Orotava Botanic Garden. Received July 29, 1911.

Introduced for the breeding experiments of Mr. J. B. Norton, Bureau of Plant Industry.

31556. NYPA FRUTICANS Wurm. Nipa palm.

From Manila, Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, July 31, 1911.

"This palm is abundant throughout the Malay region, growing especially in brackish marshes near the seashore. It often forms dense jungles, covering large areas, the leaves growing to a height of from 12 to 15 feet. The leaves are almost universally employed for thatching houses, the leaflets being stitched together for this purpose. From the flower stalk the sap is collected by the natives and boiled to obtain the sugar. More commonly this sap is used to manufacture alcohol. This palm will probably be adapted to the coastal conditions in extreme southern Florida." (*Piper*.)

Distribution.—From the Malay Peninsula and Ceylon through the Malay Archipelago to Australia.

31557. ARRACACIA XANTHORRHIZA Bancr. Arracacha.

From David, Republic of Panama. Presented by Mr. J. R. Lastra. Received July 28, 1911.

"A perennial herb of the carrot family. It attains a height of 2 or 3 feet. It has divided leaves like the carrot, small umbels of purple flowers, and has large fleshy roots which form an important article of food in South America and Central America." (*Smith, Dictionary of Popular Names of Economic Plants, p. 95.*)

"Probably best adapted to cultivation in the Southern States, as it is slow in maturing. Well worth the attention of amateurs." (*Fairchild*.)

31558. ANANAS sp.**Ivirá.**

From Paraguay. Presented by Mr. Thomas R. Gwynn, Capilla Horqueta, Departamento de V. Concepcion, Paraguay. Received August 1, 1911.

"I do not know about this being superior to anything in the United States, but I do know if you eat two or three of the crude fruits blood flows from the lips and the teeth are set on edge. Only those can understand who have eaten green apples or sour cherries. The fruit has just the same taste as the cultivated pineapple, is also the same shape, but very small.

"The blade is narrower and the thorns shorter. The leaf is used for its fiber, producing ropes and clothing. Indeed, it is of great value.

"It is a running plant, growing from the roots, piercing in its course almost any obstruction. It is produced from the root or else from the plants formed on top of the fruit, just exactly as the pineapple." (*Gwynn.*)

Seeds.

31559. STIPA TENACISSIMA Jusl.**Esparto.**

From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received August 10, 1911.

Distribution.—On the plains of the central and southern parts of Spain.

Procured for Mr. Charles J. Brand's experiments with plants for paper stock.

31560. ZEA MAYS L.**Corn.**

From Buenos Aires, Argentina. Presented by Mr. Joseph E. Wing, of the United States Tariff Board. Received July 26, 1911.

"I bought this Argentine maize in Buenos Aires. It may be quite useful in our country in regions like western Nebraska or Colorado, since it matures here in a climate that will not mature our maize, owing to cold nights and drought." (*Wing.*)

31561 and 31562. LYCOPERSICON spp.**Tomato.**

From Peru. Presented by Dr. A. Weberbauer, German Legation, Lima, Peru. Received August 1, 1911.

Seeds of the following; quoted notes by Dr. Weberbauer:

31561. "Plant small, half a meter [20 in.] high, a half shrub with yellow flowers. Fruit as large as that of *Sorbus aucuparia*. Found above Lomas Harbor, at 1,000 to 1,100 meters [3,300 to 3,600 ft.]. Grows in a hot, almost rainless, entirely frost-free region in the dry bed of a stream which sometimes receives water from the rain falling in the higher mountains."

31562. "A climbing shrub 3 meters [9½ ft.] high, with yellow flowers. Fruit as large as that of *Amygdalus persica*; green. Grows in a lateral valley of the river Apurimac in the vicinity of Andahuaylas, at about 2,600 meters [8,500 ft.]. Climate warm, generally frost free. From November to April it rains freely; from May to October there is almost none. The plants, however, grow always on the banks; they live likewise on soils constantly moist, but not swampy."

31563 to 31567. NICOTIANA TABACUM L.**Tobacco.**

From Mexico. Presented by Mr. George Young, secretary, Cananea Consolidated Copper Co., Cananea, Sonora, Mexico, who procured them from Juan Esteva & Son, Alvarado, Vera Cruz, Mexico. Received August 2, 1911.

Seeds of the following; quoted notes by Esteva & Son:

31563. "*Tabaco de Monte.*"

31563 to 31567—Continued.

31564. "*Huimanguillo*. This is grown in places rather warm, and its good quality as well as the peculiarity of being nicotinous, which, as you are aware, is an advantage in certain kinds of this weed and in the case of this plant is apt to be blended with other materials, is due, in our opinion, to the richness of the soil in which it is cultivated. This plant soon robs the soil of its nourishment and at the end of a certain number of years requires renovation of the soil unless the same is properly fertilized."

31565. "*Ozumacin*. This variety of tobacco is grown in a warm climate and in a soil that is somewhat distant from the river bank, as it is claimed that tobacco grown at a short distance from the water has an acrid and bitterish taste."

31566. "*Simojovel*. This variety grows wild and the Indians follow the practice of cutting its leaves little by little, according to the condition of the plant."

31567. "*Valle Nacional*. This variety is grown in a temperate climate and the elasticity of its leaves on being wet is due to this fact, as is also the color of its leaves and their freedom from stain, although this generally depends on the care which is being taken at the time of cutting them; it is necessary to protect the plant from the sun after a shower has fallen, otherwise the leaves will be covered with yellow spots which we call 'pinta de agua' (water-mark)."

31568 to 31570. (Undetermined.)

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, April 29 and June 22, 1911.

Bulbs of the following; quoted notes by Mr. Husbands:

31568. "(H. No. 1150 and 1151.) A carmine-red. Blazing flowers of good size. Plant, dwarf; late; good."

31569. "(H. No. 993.) Crimson with white stripes; fall flowering. Grows in the baked clays of central Chile."

31570. "(H. No. 991 and 992.) Crimson. Dwarf plant. Flowers in the summer. Thrives in dry sands or soils. From V. Antuco."

31571. SYZYGIIUM CUMINI (L.) Skeels.

(*Myrtus cumini* L. 1753, Species Plantarum, p. 471.)

(*Eugenia jambolana* Lam. 1789, Encyclopédie Méthodique Botanique, vol. 3, p. 198.)

The seeds of this East Indian myrtaceous tree were received under the name *Eugenia jambolana*, which was given to the species by Lamarck in 1789. However, Linnæus, in 1753, had given the name *Myrtus cumini* to a tree from Ceylon, and the specimen on which this name was based is preserved in the British Museum herbarium, and was identified in 1887 by H. Trimen (Journal of the Linnean Society, Botany, vol. 24, p. 142) as *Eugenia jambolana* Lam. This species being now considered to belong to the genus *Syzygium*, the earlier specific name is here placed in that genus in accordance with present rules of botanical nomenclature.

From Philippine Islands. Presented by Mr. C. V. Piper, of the Bureau of Plant Industry. Received July 26, 1911.

"*Duhot* or *Lunaboy*. A large tree, in common cultivation. Ripe fruit black, oblong, nearly 1 inch long; stone large. Flavor when ripe like a Black Republican cherry;

when unripe is quite astringent. Fruit in clusters of 10 to 40. Near Manila the fruit ripens from May 15 to June 15." (*Piper*.)

Distribution.—Found throughout India and Ceylon and extends through the Malay Archipelago to Australia. It also occurs under cultivation in the West Indies.

31572 to 31576.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August 4, 1911.

Cuttings of the following; quoted notes by Mr. Wercklé:

31572 and 31573. *MANGIFERA INDICA* L.

Mango.

31572. "*Gran cazique* (Great Chief). Fruit very large; crimson and violet in color; few fibers; best quality; very fertile."

31573. "Fruit very large and beautiful; carmine and violet in color; solid, few fibers, much meat; best quality; very fertile."

31574 to 31576. *ANNONA* sp.

Annona.

"From San Francisco, Nicaragua. Fruit delicious. Trees bear the second year. These cuttings are from three differently shaped trees. No. 31574 is a seedling, and is considered the best."

31577 to 31608.

From Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, July 26, 1911.

Seeds of the following; notes by Mr. Piper:

31577. *BRYONOPSIS LACINIOSA* (L.) Naudin.

"From Davao, May 14, 1911. A slender, cucurbitaceous vine with pretty leaves. Perhaps of ornamental value. Fruits size and shape of a pecan, yellow."

Distribution.—Throughout the tropical regions of Africa, Asia, the Malay Archipelago, and Australia.

31578. *CAJAN INDICUM* Spreng.

Pigeon-pea.

"Purchased in the market at Jaro, Panay, May 3, 1911. The speckled seeds are probably hybrids between the black and the white."

31579. *CLERODENDRUM CUMINGIANUM* Schauer.

"From La Carlota, Negros, May 1, 1911. A luxuriant, herbaceous plant with large, velvety cordate leaves. Panicle purple, remaining so in age."

31580. *CLERODENDRUM INTERMEDIUM* Chamisso.

"From La Carlota, Negros. A beautiful, luxuriant herb growing 6 to 10 feet tall, with large, opposite, cordate, somewhat dentate, leaves. Panicle large, scarlet, the calyx and peduncles remaining so for a long time. Should make a fine tropical annual plant."

Distribution.—Known only from the Philippines.

31581. *CROTALARIA SALTIANA* Andrews 1811.

(*Crotalaria striata* Schrank 1828.)

"From Iloilo, May 6, 1911. A half-shrubby bush, 3 to 6 feet high."

Distribution.—Throughout tropical and southern Africa and in tropical Asia and South America.

31582. *GOSSYPIUM* sp.

Kidney cotton.

"A variety found on the island of Marinduque. A company testing it has 12 acres planted and has high hopes of it. Apparently a form of *Gossypium braziliensis*. Prof. Conner, of the Manila Bureau of Agriculture, says they have obtained the same sort from various islands of the Philippines."

31577 to 31608—Continued.

31583. *Gossypium Nankin* Meyen.

Cotton.

"From Argao, Cebu, April, 1911."

31584. *Momordica ovata* Cogn.

"A peculiar cucurbit with subglobose, spiny fruits about the size of a lemon. Said to be used as a headache cure. Cultivated at Cagayan, Misamis; collected April 29, 1911."

Distribution.—Found in the Philippine and Celebes Islands.

31585. *Ormosia calavensis* Azaola.

"A locustlike tree from Siquijor, May, 1911."

Distribution.—Known only from the Philippines.

31586. *Pahudia rhomboidea* (Blanco) Prain.

"*Balayong* or *Tindalo*. A valuable timber tree. Seeds used for some medicinal purpose. These were purchased in the market at Batangas, Luzon."

Distribution.—Known only from the Philippines.

31587. *Cracca dichotoma* (Desv.) Kuntze.

"Stems slender, suberect, 2 to 3 feet high. Seed habits excellent."

Distribution.—Known only from the Philippines.

31588. *Trichosanthes quinquangulata* A. Gray.

"A cucurbitaceous vine with beautiful, globose, smooth, red fruits as large as an orange. From San Miguel, Tarlac, June, 1911."

Distribution.—Known only from the Sulu Archipelago in the Philippines.

31589. *Manihot esculenta* Crantz.

Cassava.

"A native variety grown at the Los Banos Agricultural College. Earliest variety found here, maturing in five months. Roots sweet. Presented by Dr. E. B. Copeland."

Distribution.—A herbaceous plant with tuberous roots found in a wild state in Brazil and generally cultivated in the Tropics.

31590. *Heterospathes elata* Scheff.

Palm.

"A tall, graceful palm cultivated at Argao, Cebu. Leaves pinnate, recurved. Panicle large, drooping. Also seen wild near Cabadbaran, Mindanao."

Distribution.—An erect, unarmed palm, found in the Molukkas and the Philippines.

31591. *Arundinella setosa* Trin.

"Tall, erect, not very leafy, grows 3 to 4 feet high, of about the habit of tall meadow oat-grass. Stock are apparently not fond of it. Seed habits good. From Baguio, April 10, 1911. Should be tested at Biloxi, Miss.; Chico, Cal.; and Arlington Farm, Va."

Distribution.—From the western Himalayas, where it reaches an elevation of 5,000 feet, southeastward through India and China to the Philippines.

31592. *Canavali* sp.

"From the seashore of Davao, May 14, 1911."

31593. *Crotalaria incana* L.

"A bushy, half shrubby, annual (?) legume forming plants 3 to 6 feet high and 2 to 4 feet across. Flowers yellow. Producing seeds in abundance. Manila, April, 1911."

Distribution.—Throughout the Tropics, either naturalized or cultivated; probably a native of the West Indies.

31577 to 31608—Continued.**31594. MEIBOMIA HETEROCARPA (L.) Kuntze.**

"From Hinatuan, Surigao Province, Mindanao, May 13, 1911. Suberect, 3 to 4 feet high, very fruitful. Perennial (?). Stems hard but not woody."

Distribution.—Southeastern Asia, extending from the Himalayas in northern India eastward through Burma and Malakka to China and Japan, and throughout the Malay and Polynesian archipelagoes to Australia.

31595. SYNTERISMA CILIARIS (Retz.) Schrad.**Crab-grass.**

"From La Carlota, Negros, May, 1911. Much larger than our common crab-grass but of same habit and value. To be tested at Biloxi, Miss., and Arlington Farm, Va."

31596. CAPRIOLA DACTYLON (L.) Kuntze.**Bermuda grass.**

"From Lamao, June, 1911. A small crab-grass forming pure growths and becoming 12 to 18 inches high.

31597. ERIOCHLOA RAMOSA (Retz.) Kuntze.

"From Alabang, May 28, 1911. A common grass in rather low ground. Stems slender, fairly erect. Seed shatters easily. Of value only as a pasture grass, provided it will spread."

Distribution.—The plains of India and generally distributed in the Tropics.

31598. ECHINOCHLOA COLONA (L.) Link.

"From Lamao, June, 1911. This volunteers in cultivated fields like crab-grass. Cattle and carabao eat it readily."

31599. PANICUM DISTACHYON L.

"From Lamao, June, 1911. A grass forming great, loose mats 2 to 6 feet across. When growing thickly it becomes 18 inches high. Apparently of considerable value as a pasture grass, especially in sandy soil."

Distribution.—The plains of India and eastward to China and through the Malay Archipelago to Australia.

31600. PASPALUM LONGIFOLIUM Roxb.

"From San Miguel, Tarlac, May 30, 1911. A perennial tufted species."

Distribution.—Throughout the warmer parts of India and generally scattered in the Tropics.

31601. PROSOPIS JULIFLORA (Swartz) DC.**Algaroba.**

"A species much like our common mesquite, quite abundant around the shores of Manila Bay. The pods are not nearly so good as the Hawaiian mesquite, but cattle are said to eat them. Mr. Merrill, of the Manila Bureau of Agriculture, is pretty certain that it is not native, but an introduction from America, perhaps changed by its environment here."

31602. STIZOLOBIUM sp.

"Found in woods near La Carlota, Negros, May 1, 1911."

31603. STIZOLOBIUM sp.

"From Bosoc, Negros, May, 1911."

31604. STIZOLOBIUM PRURIENS (Stickm.) Medic.

"This may be identical with No. 31602, but is probably different."

31605. SYNTERISMA CILIARIS (Retz.) Schrad.**Crab-grass.**

"Much like the common crab-grass, but larger and more vigorous."

31577 to 31608—Continued.**31606.** *VIGNA LUTEA* (Swartz) A. Gray.

"A luxuriant species growing on and near the strand at Tacloban, Leyte. Habit that of a very viny catjang. Flowers yellow. The best *Vigna* I have seen outside of the cultivated ones. In one place this seemed to be cultivated and the seeds are said to be eaten."

Distribution.—Originally described from Jamaica; cosmopolitan in the Tropics.

31607. *VIGNA LUTEA* (Swartz) A. Gray.

"Grows on the strand at Surigao, also at Tacloban, Davao, and Tandag. Forms running vines 6 to 12 feet long and under favorable conditions grows up shrubs to a height of 12 to 15 feet. Very vigorous and quite fruitful. No disease."

31608. *VIGNA SINENSIS* (Torner) Savi.

Cowpea.

"Purchased in the market at Jaro, Panay, May 3, 1911."

31609 to 31612. *MEDICAGO* spp.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, April 21, 1911.

Seeds of the following; quoted notes by Mr. Husbands:

31609. *MEDICAGO ARABICA* (L.) All.

The size and venation of the pods are the same as in the species, but the spines are wanting or reduced to small tubercles, bridging the dorsal ridges of the pod.

"A new beardless type."

31610. *MEDICAGO ARABICA* (L.) All.

"An old bearded sort."

31611. *MEDICAGO HISPIDA RETICULATA* (Benth.) Urban.

"A new beardless sort."

31612. *MEDICAGO HISPIDA DENTICULATA* (Willd.) Urban.

"The same as the preceding, but bearded."

"The country people are aware of two kinds of seed pods, i. e., beardless and bearded, but they think that it is the same plant that produces them and that more or less prickles are due to moisture conditions. Everyone says there is but one kind. I found a very few plants by patient search and was able to obtain four kinds. Each kind of seed is from a separate and distinct plant.

"In their dry states the plant characteristics could not be studied. I am convinced that a study of the live plants will reveal many varieties to which scientific attention has not been given. Roaming about I have often noticed the great variations in this plant, the distinct black markings or lack of them, the varied form of leaves and plant, the degrees of growth from flat on the ground to 5 feet high, with many intermediate growths side by side in the same soil, while both the bearded and the beardless sorts grow together in dry and moist or irrigated lands, the proportion of each being marked.

"In the 'vegas,' or moist plains, which adjoin the foothills and also growing wild in irrigated fields, planted with corn, potatoes, beans, peas, pumpkins, etc., the bearded sorts predominate, and the beardless sorts are scattered sparingly among them. On the contrary, in the dry farm lands the beardless varieties prevail in like proportions. This suggests the fact that the beardless has an affinity for dry lands, which may be useful to follow with a view of producing a dry-land alfalfa.

"Botanists say that these seeds were introduced from Europe. This is hard to believe. It seems to me that no plant has the *chilensis* brand more clearly marked; I have found stray plants in the most remote parts of Chile, in the Cordilleras far away from civilization, and the possibility of being the product of seeds from other localities. Its distinctly different type in every respect and varied in each locality all go to show its indigenous character."

31613. THESPESIA POPULNEA (L.) Solander.

Suriya.

From the Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 8, 1911.

"A shrub or small tree with large, yellow, trumpet-shaped blossoms. Cultivated more or less as an ornamental." (*Piper.*)

31614. PERSEA AMERICANA Miller.

Avocado.

From Livingston, Guatemala. Presented by Mrs. Lucie Potts. Received August 24, 1911.

Supposed to contain different varieties.

31615. MANGIFERA INDICA L.

Mango.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August 9, 1911.

"Rio Grande. Best variety. Very big. Best quality." (*Wercklé.*)
Seeds.

31616. PERSEA AMERICANA Miller.

Avocado.

From Guatemala, Central America. Presented by Mr. S. Billow, Guatemala. Received August 9, 1911.

"These seeds are from Amatitlan, about 24 miles from the capital city and grown at an altitude of 3,800 feet; the meat is of a delicious flavor and the avocados weigh nearly three-fourths of a pound. These seeds are selected from the best grown in that district." (*Billow.*)

31617. MEDICAGO sp.

From near Baba, northwestern Mongolia. Received through Mr. Frank N. Meyer, agricultural explorer, August 10, 1911.

"(No. 1618a, May 1, 1911.) (*Medicago falcata* ?.) An alifolia that reaches a height of apparently not over 2 feet. Found growing here and there in large quantities on hills, between dense grass at altitudes of about 4,000 feet. As the cold gets very intense in these regions, these plants may be tested in the most northern sections of the United States." (*Meyer.*)

31618 to 31630.

From Canal Zone. Presented by Mr. Ramón Arias-Feraud, Panama. Received August 10, 1911.

31618. ANANAS SATIVUS Schult.

Pineapple.

"Suckers of the genuine *Taboga* pineapples, which are considered the best flavored in this region. They are getting scarce because they do not grow as large as other varieties, and as the leaves are covered with plenty of spines the planters prefer to handle the larger fruits that are free from the spines."

31618 to 31630—Continued.**31619.** *GARCINIA* sp.**"Monkey-fruit."**

"A beautiful evergreen tree, the fruit of which the boys like very much. The seeds are enveloped and the inner shell lined with a milky white pulp, which is chewed and which has a peculiar sweet, acid taste. There is a larger variety of this fruit that is still better, but the crop has already passed. I brought these plants from the Cordilleras about 10 years ago, in seeds, and they have begun to bear now. They are not found near the surroundings of the town, but out on the mountains." (*Arias-Feraud.*)

31620 to 31630. *MANGIFERA INDICA* L.**Mango.**

From "El Carmen" orchard, Las Sabanas, Canal Zone.

31620. *Green.***31625.** *Kidney.***31621.** *Quality No. 2.***31626.** *Round.***31622.** *Red Apple.***31627.** *Soft, sweet.***31623.** *Pico de Pajaro.***31628.** *Common quality.**(Bird's Beak.)***31629.** *Pineapple.***31624.** *Thick skin.***31630.** *Assorted mangos.***31631. PERSEA AMERICANA** Miller.**Avocado.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, August 14, 1911.

Probably Mr. Husbands' No. 1325 of which he says:

"*Pallas.* These seeds are from fruits selected from among all the best varieties growing in Quillota as the best of all, having smaller seeds, thicker flesh, and the most delicious flavor of any. Trees grown from seed fruit in five years. Believed to come true from seed, but nothing is scientifically known about it." (*Husbands.*)

31633 and 31634.

From Peradeniya, Ceylon. Presented by Dr. John C. Willis, director, Royal Botanic Gardens, Peradeniya. Received August 14, 1911.

Seeds of the following:

31633. *MANGIFERA ZEYLANICA* (Blume) Hook. f.

Distribution.—A tree found on the island of Ceylon up to an elevation of 3,000 feet.

31634. *SPONDIAS PINNATA* (L.) Kurz.

See Nos. 30491 and 30627 for previous introductions.

31635 to 31637.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August 14, 1911.

Seeds of the following; quoted notes by Mr. Wercklé:

31635. *BOMAREA* sp.

"*Papa de venado* (Dear potato). Edible roots. Quite productive. Grows near frost line."

31636. *COCCOLOBIS UVIFERA* L.**Sea-grape.**

"*Papaturros.* Improved large-fruited. For crossing with the *carrocaliente*" (See No. 31931, *Coccolobis* sp.).

31637. *COUEPIA POLYANDRA* (H. B. K.) Rose.**Yellow sapote.**

"The famed *sapotilla de olor.*"

Distribution.—A tree, belonging to the rose family, found in the vicinity of Acapulco on the Pacific coast of southern Mexico.

31638. DIOSCOREA sp.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, August 15, 1911.

"*Haiaque*. A dainty vine elegant for window or table decoration. Tubers edible when cooked." (*Husbands*.)

31639. RHUS VERNICIFLUA Stokes.**Lacquer tree.**

The lacquer tree has heretofore been listed in these inventories as *Rhus vernicifera*, which was published in 1825 by De Candolle (*Prodromus*, vol. 2, p. 68). In 1796, however, Salisbury (*Prodromus*, p. 169) published the name *Rhus verniciferum*, based on *Rhus vernix* L., thus invalidating the use of the same name by De Candolle. *Rhus vernix*, published in 1753 by Linnæus (*Species Plantarum*, p. 265) included two distinct species, the poison sumac of America and the lacquer tree of Japan. In 1771, Linnæus (*Mantissa Plantarum*, p. 358) excluded the Japanese plant from *R. vernix*, thus showing that he wished the name to apply to the American plant. As no other name had been published for either of these plants up to this time there is no reason why this should not be followed. In 1812, Stokes (*A Botanical Materia Medica*, vol. 2, p. 164) called attention to this fact in a note under his description of *Rhus verniciflua*, which is apparently the earliest name published for the lacquer tree, and is the one here used.

From Japan. Presented by Mr. Thomas Sammons, American consul general, Yokohama, Japan, who procured them from Mr. Metsunosuke Yamaguchi, Shindamachi, Nagano, Nagano Prefecture, Japan. Received July 26, 1911.

"A slender-branched tree with winged leaves, attaining a height of 20 feet. It is common throughout Japan and is cultivated for its sap, which flows from its stem and branches on being wounded. It is first cream colored, but on exposure to the air soon turns black, and is the varnish which the Japanese use for lacquering their furniture or ornamental articles." (*Smith, Dictionary of Popular Names of Economic Plants*, p. 426.)

"The varnish or lacquer is valuable because of its great hardness without brittleness or becoming cracked, its high lustre and mirrorlike surface, which remains untarnished for centuries, its resistance to the agencies which attack resinous varnishes, as it is not injured by boiling water, hot ashes, hot alcoholic liquors, acids, etc." (*J. J. Rein, Industries of Japan*.)

"Unlike ordinary paints, which dry because of oxidizing properties of the oil in them, this Japanese lacquer dries better in moist than in dry air, as the result of a supposed enzyme which acts upon an albuminoid in the presence of a vegetable-acid and a gum.

"Experiments have shown that lacquer will not harden if subjected to temperatures which are high enough to coagulate the albumen. From a painful personal experience with some of the imported juice of this tree I can warn anyone not to experiment with it unless he is immune to ivy poisoning. Here would seem to be an opportunity to discover means by which with the use of proper face and hand lotions workers could handle the lacquer with impunity. Certainly, so wonderful a thing as this lacquer industry should not go without investigation because of its poisonous properties." (*Fairchild*.)

Experimenters with this tree should remember that the volatile sap causes a painful eruption on the skin of certain persons similar to that caused by the species of our common *Rhus* known as poison ivy, though probably more intense even than the latter.

Distribution.—On the wooded slopes of the mountains in the islands of Japan and in the provinces of Ichang, Shensi, and Szechwan in China.

31640. JUGLANS REGIA L.**Walnut.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, June 12, 1911.

"A large Chile variety of accidental origin from Chile-grown seed. The year was one of extreme drought and therefore the nuts are smaller and with less meat than usual." (*Husbands.*)

31641. CUCURBITA sp.**Squash.**

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion, Paraguay. Received August 14, 1911.

"*Zapallo*. I consider this a very ordinary variety. These zapallos have no distinguishing names; all are just zapallos, or squash in English." (*Mead.*)

31642. LUCUMA OBOVATA H. B. K.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, August 14, 1911.

"*Lucuma de Quillota*. The skin of this fruit is a bright, dark green, flesh yellow, very much like a pumpkin but lighter colored and more mealy." (*Husbands.*)

Distribution.—The provinces along the coasts of Peru and Chile.

31643 to 31645.

From Seharunpur, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanical Gardens, United Provinces. Received August 15, 1911.

Seeds of the following:

31643. BAMBOS ARUNDINACEA Retz.**Bamboo.**

See No. 21317 for description.

31644. DIOSPYROS MONTANA Roxb.

Distribution.—From the Himalayas to Ceylon in India, and through the Malay Archipelago to tropical Australia.

31645. CHALCAS PANICULATA L.**31646 to 31649.**

From India. Presented by Mr. A. C. Hartless, superintendent, Government Botanical Gardens, United Provinces, Seharunpur. Received August 15, 1911.

Seeds of the following; notes furnished by collector and transmitted by Mr. Hartless:

31646 and 31647. MELILOTUS ALBA Desr.**Sweet clover.**

31646. From Ladakh.

31647. Locality not given.

31648. MEDICAGO SATIVA L.**Alfalfa.**

"*Bu-Kusk*, from Iskardo. This variety once cultivated remains for at least 8 or 9 years, provided that bhail (manure) is thrown on it and it is not trodden upon. Its flower is of blue color. It is of short stature with thin branches. Animals eat it with great pleasure. If, when green, animals eat it, it does no harm."

31649. MEDICAGO FALCATA L.

"*Boole Bu-Kusk*, from Iskardo. This variety once cultivated remains for at least three or four years. If it is given to animals when green, it swells their stomachs. Its flower is yellow in color, and its plant is larger than that of the preceding number, but animals do not like it as well."

31651. CITRUS MEDICA L.**Citron.**

From Villa Rica, Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion, Paraguay. Received August 18, 1911.

"These citrons were found in a shipment of oranges, etc., from Villa Rica. Whether they are out of the ordinary or not I can not say. Largest citron weighed $4\frac{1}{2}$ pounds, 22 inches in circumference the long way by 13 inches in circumference around the center. When conditions are excellent for growth, fruits up to 12 inches in length are not uncommon. The plant is of scraggly growth, the branches reaching down to the ground if not pruned and sprouting wherever they touch. The peel is used to some extent here for preserves." (*Mead.*)

31652 and 31653.

From Pietermaritzburg, Natal, South Africa. Presented by Mr. W. J. Newberry, curator, Botanic Gardens. Received August 18, 1911.

Cuttings of the following:

31652. PRUNUS sp.**Plum.**

"*Methley*. This originated near Mr. Methley's homestead, the original tree being a volunteer and growing near a spruit hard by. This seedling, to-day the parent of thousands growing throughout the colony, attracted attention directly it first fruited, owing to the earliness with which the plums ripened; that is, at the same time as our local myrobalan (myrobalan is used throughout as a group name), possibly the *Marianna* and frequently but erroneously called the *Mirabelle*.

"The virtue of the *Methley* is its early ripening. It possesses the good characters of the *Satsuma*, but is deficient in point of size.

"There is every reason to believe that the plum originated from the fertilizing of *Satsuma* flowers by myrobalan pollen, the male element transmitting the smaller size and earliness of ripening and not impairing with myrobalan faults the flavor and texture of the *Satsuma*.

"From inquiries it seems that some blood plums were sent to Mr. Methley from another farm from trees growing in juxtaposition to myrobalans. After this lot of fruit had been partaken of, the stones were thrown out. From one of these pits washed down toward the sluit by the weather it is assumed the original *Methley* grew. As no other adventitious plums came into being, it is rather interesting to speculate upon this one survival, which may, of course, have been the only cross-pollenized seed of the lot.

"The color of the fruit is dark red, ripening to darker red; dots numerous, russet, areolar; bloom, whitish or bluish; flesh, dark red, firm; stone, medium in size, cling; flavor and quality good; season very early; thrives on peach stock." (*Extract from C. Fuller in Natal Agricultural Journal, vol. 14, 1910, pp. 279-280.*)

31653. MALUS sp.**Apple.**

Wainwright. "A good subtropical apple." (*Newberry.*)

31654. OXALIS sp.

From Chile. Received through Mr. José D. Husbands, Limavida, Chile, August 14, 1911.

"*Chapeola*."

Tubers.

31655 to 31676. SOLANUM spp.**Potato.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, August 14, 1911.

Tubers of the following; quoted notes by Mr. Husbands:

"These potatoes, sorts that are cultivated by the Indians, all of wild origin, are from the wild country of the interior of Llanquihue. The Indian names have little significance, as the same names may be used for other kinds of potatoes by distant tribes or the same tubers called other names."

31655 to 31665. "White and semiyellow kinds."

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| 31655. " <i>Guicañas</i> ." | 31662. " <i>Haurunas</i> ." |
| 31656. " <i>Ojosos</i> , smooth." | 31663. " <i>Puñeriza rosada</i> (pink).
Very early; said to
yield potatoes in seven
weeks." |
| 31657. " <i>Coraila</i> , white." | |
| 31658. " <i>Pedanes</i> ." | |
| 31659. " <i>Bolera blanca</i> ." | |
| 31660. " <i>Guafas</i> ." | 31664. " <i>Murtā</i> ." |
| 31661. " <i>Yacuis azules</i> ." | 31665. " <i>Libra</i> ." |

31666 to 31676. "Yellow-fleshed varieties."

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| 31666. " <i>Palmata</i> ." | 31673. " <i>Pelchuquina</i> ." |
| 31667. " <i>Panas</i> ." | 31674. " <i>Sieta semana rosada</i> .
Pink skin; very early;
said to give potatoes
in seven weeks." |
| 31668. " <i>Araucana mus-
ca</i> ." | |
| 31669. " <i>Chilota</i> ." | |
| 31670. " <i>Ocas</i> ." | 31675. " <i>Vigochas</i> ." |
| 31671. " <i>Almud</i> ." | 31676. " <i>Piconas</i> . Extra early." |
| 31672. " <i>Cauchan</i> ." | |

31677 to 31679. JUNIPERUS UTAHENSIS (Engelm.) Lemmon.**Juniper.**

Received through Mr. George B. Sudworth, dendrologist, Forest Service, U. S. Dept. of Agriculture, August 19, 1911.

Seeds of a very attractive southwestern juniper:

- 31677.** From Yavapai County, Ariz., October, 1910.
31678. From southern Utah, December, 1910.
31679. From the Grand Canyon of the Colorado River, Ariz., November, 1910.

Distribution.—In the desert region between the Rocky Mountains and the Sierra Nevada, from southern Wyoming southwestward through eastern Utah and western Colorado to northern Arizona and southeastern California.

31680. GOSSYPIUM DRYNARIOIDES Seemann.**Cotton tree.**

From Hawaii. Presented by Mr. Ralph S. Hosmer, Superintendent of Forestry, Honolulu, at the request of Dr. E. V. Wilcox, Hawaii Agricultural Experiment Station, Honolulu. Received August 14, 1911.

"I have learned that at the 'west end of Molokai,' in the driest locality of the island, where this plant was originally collected by Nelson, the companion of Capt. Cook, there is only one tree in existence and that is half dead. A new locality on the island of Hawaii has been discovered and six trees are still growing on the slopes of the volcano Hualalai on rough lava fields at an elevation of 2,000 feet. The trees are

from 15 to 25 feet high and when covered with large scarlet flowers are of striking beauty. If not properly protected they will soon be a thing of the past, as the natives strip the trunks of the bark for the rich reddish brown sap used by them for dyeing their fish nets. Cattle are also very fond of the leaves. The plants from the island of Hawaii differ so much from those on Molokai as to need a new varietal name." (*Joseph F. Rock, Botanist, College of Hawaii, Honolulu.*)

31681 and 31682. *PITTOSPORUM* spp.

From Hawaii. Presented by Mr. Ralph S. Hosmer, Superintendent of Forestry, Honolulu, at the request of Dr. E. V. Wilcox, Hawaii Agricultural Experiment Station, Honolulu. Received August 14, 1911.

Seeds of the following:

31681. *PITTOSPORUM* *HOSMERI* Rock.

"This species is remarkable for the unusually large woody capsules which open into two, three, and sometimes four valves. Native name *Aawa hua kukui*. The fruits exude a milky glutinous sap." (*Report of the Division of Forestry, Territory of Hawaii, for the Biennial Period Ending December 31, 1910, p. 84.*)

Distribution.—This tree is rather common on the lava fields of Puuwaawaa, Hawaii, at an elevation of 3,000 feet.

31682. *PITTOSPORUM* *KAUAIENSE* Hillebrand.

Distribution.—A tree usually about 30 feet high, growing on the slopes of the mountains in the vicinity of Waimea on the island of Kauai in Hawaii.

31683. *SOLANUM* sp.

Potato.

From Perene, Peru. Presented by Mr. J. A. Furlong. Received August 18, 1911.

"*Shiri*, or bitter potatoes." (*Furlong.*)

Tubers.

31684. *PHOENIX* *DACTYLIFERA* L.

Date.

From Morocco. Purchased from Barrow, Lane, & Ballard (Ltd.), London, England. Received August 18, 1911.

Taflelt. See No. 18630 for description.

Seeds.

31685. *ERAGROSTIS* *PECTINACEA* (Michx.) Nees.

From Ainsworth, Nebr. Presented by Mr. G. J. Kimball, through Mr. H. N. Vinall, of the Bureau of Plant Industry. Received August 21, 1911.

"One of the grasses which seems to be of most promise for seeding in the sand hills of Nebraska." (*Vinall.*)

Distribution.—In dry, sterile soil from New Hampshire to Florida and westward to South Dakota and Texas in the United States, and southward in Mexico to Vera Cruz.

31686. *LICANIA* *PLATYPUS* (Hemsl.) Fritsch.

From San Jose, Costa Rica. Presented by Mr. C. Wercklé. Received August 21, 1911.

"*Sansapote*."

Distribution.—A tree found in Central America from Nicaragua, where it is cultivated, southeastward through Costa Rica and Panama to Colombia.

31687. MEDICAGO SATIVA L.**Alfalfa.**

From Chugutchak, Mongolia. Received through Mr. Frank N. Meyer, agricultural explorer, August 18, 1911.

"(No. 1617a, May 16, 1910.) A strain of alfalfa said to be much hardier than the ordinary varieties, but also said to be of slower growth. While fields sown to imported Turkestan seed give three cuttings a year in Chugutchak, this variety gives but two, but while one-third of the plants of the Turkestan alfalfa are killed in a severe winter, this strain is said not to suffer at all. It should be tested in a cool and dry region of the United States, especially in Wyoming, Montana, Idaho, etc. This seed was saved by a Sart farmer from his own plants and obtained through the assistance of the Russian Aksakal at Chugutchak." (*Meyer*.)

31688 to 31697.

Received through Mr. Frank N. Meyer, agricultural explorer, August 18, 1911.

Seeds of the following:

31688. MALUS sp.**Apple.**

From mountains near Kulja, Chinese Turkestan.

"(No. 1619a, April 20, 1911.) Very hardy wild apples, collected in semiarid mountains at altitudes between 5,000 and 6,000 feet above sea level. The trees growing at 4,500 feet were in bloom at time of visit, but those at altitudes between 5,500 and 6,000 feet above sea level were perfectly dormant. To be used as hybridization material in creating hardier varieties which will be able to stand better than most of the present strains, the climate of the upper Mississippi Valley and the regions west of it. See also Nos. 968 to 971 (S. P. I. Nos. 30946 to 30949) in connection with this." (*Meyer*.)

31689. MALUS sp.**Apple.**

From Saisansk, southern Siberia.

"(No. 1620a, May 29, 1911.) An apple, said to grow in gardens around Saisansk; apparently seedlings from wild varieties, occurring in the mountains. The remarks made under Nos. 968 to 971 and 1619a (S. P. I. Nos. 30946 to 30949 and 31688) also apply to this one." (*Meyer*.)

31690. MALUS sp.**Apple.**

From Saisansk, southern Siberia.

"(No. 1621a, May 29, 1911.) A small apple of bright-red color and possessing a most excellent flavor. Said to be grown sparingly near Saisansk; apparently an improved variety of *Malus baccata* or perhaps a hybrid; is sold locally dried as a sweetmeat and for compote and preserve material. To be used for the same purposes as the preceding." (*Meyer*.)

31691. SORBUS sp.

From near Santai, Mongolia.

"(No. 1622a, April 23, 1911.) A rowan tree found on the north slopes of a semi-arid mountain, occurring at altitudes between 8,000 and 9,000 feet; is more or less shrubby in growth. Apparently very resistant to cold and adverse conditions; recommended therefore as an ornamental garden and park shrub for the most northern sections of the United States." (*Meyer*.)

31692. ROSA sp.**Rose.**

From near Bogh-dalak, Mongolia.

"(No. 1623a, April 24, 1911.) A small growing rose, occurring on sunburned, dry, rocky hills at altitudes of between 6,000 and 7,000 feet. Of value possibly in hybridization work to create hardy, drought-resistant strains of yellow-flowered roses." (*Meyer*.)

31688 to 31697—Continued.

31693. *ROSA* sp.

Rose.

From near Ghapsagai, Mongolia.

"(No. 1624a, April 26, 1911.) A shrubby rose found in dry, stony places at an altitude of 3,700 feet. May be yellow flowered; if so, the same remarks apply to it as made on the preceding number." (*Meyer.*)

31694. *ROSA* sp.

Rose.

From near Ghapsagai, Mongolia.

"(No. 1625a, April 27, 1911.) A wild rose of rather tall, bushy growth, covered with numerous spines, which are very white, color of flowers apparently rose. Of value possibly as a stock in dry, cold regions and as a factor in hybridization work." (*Meyer.*)

31695. *ROSA PÉRSICA* Michx.

Rose.

From near Ghapsagai, Mongolia, Russian territory.

"(No. 1626a, April 27, 1911.) A very rare and curious rose having small, yellow flowers and undivided, glaucous foliage; looks not unlike a barberry; grows to a height of from 1 to 3 feet. Occurs on dry clayey ridges and on alkaline loess plains between other vegetation. Of botanical interest only." (*Meyer.*)

31696. *SATUREJA* sp.

From near Barlik, Mongolia.

"(No. 1627a, May 1, 1911.) A labiate closely allied to thyme, having very pleasantly flavored foliage that can be advantageously used in soups, with meats, pickles, etc. Occurs on dry, rocky ridges and between stony débris. Especially suitable for the drier sections of the United States as a savory garden herb." (*Meyer.*)

31697. *RAPHANUS SATIVUS* L.

Radish.

From Chugutchak, Mongolia.

"(No. 1628a, May 16, 1911.) A medium-large variety of Chinese winter radish, called *Ching loba*. An excellent winter vegetable, which is eaten alike by Russians, Tartars, Sarts, Kalmucks, and Chinese, although introduced and grown by the last-named only in these parts of the world.

"The Chinese way of serving is to slice them in very thin strips, to sprinkle some soy-bean sauce or old vinegar over them, and to eat them as an appetizer. The Russian way, however, is to cut them in square strips, to sprinkle salt over them and a liberal quantity of vinegar, and to serve them as a salad with the regular meal.

"The plants like a well-drained yet rich soil and do not object to a certain amount of alkali. They require water and must be irrigated in times of drought, as otherwise they remain stunted and acquire a pungent taste. They are sown out in the latter part of July or early August, three to four seeds per hill and 1 to 1½ feet apart in all directions. Later on the plants are thinned out, so that only one is left, like beet roots, for instance.

"They stand light frosts, but must be harvested before the heavy frosts begin. They are pulled out by a twist of the hand and are left to dry out for some hours on the field; then the leaves are torn off and the roots are stored in dug-out cellars, much like potatoes or sugar beets. A few of the best are saved and planted out as soon as the danger of frosts is passed.

"These winter radishes deserve to become better known in the United States. They are of easy culture, attractive appearance, and possess a refreshing taste, while their appetizing and stomach-strengthening properties are so astonishing

31688 to 31697—Continued**31697—Continued.**

that the Chinese say that a man selling sliced *Ching lobas* near a boarding house ruins the boarding-house keeper. People doing much manual labor especially seem to be benefited by the use of them.

"As these roots stand long transportation very well, they will be useful in supplying mining camps and sailors with the necessary fresh vegetables. From the nature of the plants they will thrive especially well in the western United States. Seeds formerly sent under Nos. 17932, 17935 to 17937, 21623, 23968, and 23969." (*Meyer.*)

31698. MELILOTUS ALBA Desr.**Sweet clover.**

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received August 22, 1911.

"This clover grows 2 meters [6½ ft.] or more high. It has small white flowers and tiny reniform fruits. The general aspect is much like *Medicago sativa*, but the flowers are white and much smaller, fruits quite different. It is perennial, grows on the very worst soil, consisting of gravel, and looks quite fresh and green amidst its withered surroundings (no rain for last seven months). It seems to me that this might prove of interest to the specialists looking for forage plants for arid regions." (*Proschowsky.*)

31699 to 31701.

From China. Presented by Mr. N. Gist Gee, Soochow University, Soochow, China. Received July 31, 1911.

31699. LITCHI CHINENSIS Sonner.**Lychee.**

See Nos. 10670 to 10673, 14888, and 16237 to 16243 for descriptions.
Seeds.

31700. ERIOBOTRYA JAPONICA (Thunb.) Lindl.**Loquat.**

"*Bilo.*"

Seeds.

31701. ZINZIBER OFFICINALE Rosc.**Ginger.**

Roots.

31702. SOLANUM NIGRUM L.**Nightshade.**

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received August 16, 1911.

Variety *miniatura*.

31703. MEDICAGO FALCATA L. (?)

From Gilgit, Kashmir, British India. Presented by Mr. F. Booth Tucker, Salvation Army, Simla, British India. Received August 8, 1911.

31704 to 31707.

From Manila, Philippine Islands. Presented by Mr. P. J. Wester, horticulturist, Bureau of Agriculture. Received August 21, 1911.

Seeds of the following; quoted notes by Mr. Wester:

31704. TRICHOSANTHES QUINQUANGULATA A. Gray.

"A cucurbitaceous vine of vigorous growth indigenous to the Philippines. The fruit is globose and somewhat larger than an apple, the surface being a brilliant red. As the fruit keeps for many weeks after maturity, retaining its color, I believe that it might be used to great advantage for decorative purposes."

31704 to 31707—Continued.**31705. TRICHOSANTHES sp.**

"This species grows on a vine similar to the preceding, but the fruit is smaller and straw colored."

31706. (Undetermined.)

"An herbaceous, ornamental shrub with large leaves and vermilion-colored flowers produced in a terminal panicle, the bright-colored calyces being persistent for several weeks after the corollas have dropped."

31707. TERMINALIA EDULIS Blanco.

"A large forest tree with an open head, producing an edible, subacid fruit about the size of a small plum. If, as is probable, the tree succeeds in south Florida, it will be a valuable addition to your ornamental shade trees there and the fruit can probably be utilized in making jelly and other preserves."

31708. PRUNUS TRIFLORA Roxb.**Plum.**

From China. Presented by Mr. N. Gist Gee, Soochow University, Soochow, China. Received August 22, 1911.

"These seeds were obtained from fruits about an inch in diameter and blood red and were rather full of fibers." (*Gist Gee.*)

31709 to 31714.

From Ceylon. Presented by Mrs. Charles B. Bigelow, Boston, Mass., through Prof. C. S. Sargent, Arnold Arboretum, Jamaica Plain, Mass. Received August 3, 1911.

Seeds of the following:

31709. FERONIA ELEPHANTUM Correa.**Wood-apple.**

See No. 25888 for description.

31710. ANNONA MURICATA L.**Soursop.**

See No. 18737 for previous introduction.

Distribution.—Native and cultivated in tropical America, and introduced into other tropical countries.

31711. ANNONA CHERIMOLA Miller.**Cherimoya.****31712. ANNONA SQUAMOSA L.****Sweetsop.****31713. CHRYSOPHYLLUM CAINITO L.****Star-apple.**

See No. 27572 for description.

31714. CARICA PAPAYA L.**Papaya.****31715 to 31719.**

From Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 9, 1911.

Seeds of the following; quoted notes by Mr. Piper:

31715. SYNTHESISMA CILIARIS (Retz.) Schrad.**Crab-grass.**

"From Lamao, June, 1911. A larger species than our common American crab-grass."

31716. DOLICHOS LABLAB L.**Bonavist bean.**

"Cultivated for a vegetable. Native name *Batao*. Grown at Lamao Experiment Station."

31717. ERIOCHLOA RAMOSA (Retz.) Kuntze.

"From Manila, June, 1911."

31715 to 31719—Continued.**31718. PHASEOLUS sp.**

"From Manila, June, 1911. Distributed by Mr. Merrill of the Manila Experiment Station as *Phaseolus calcaratus*, which it resembles in so far as it has yellow flowers and spurred wings, but the pods and seeds are very different."

31719. URARIA LAGOPODIODES (L.) Desv.

"A perennial legume with spreading stems 1 to 2 feet long. Readily eaten by cattle and producing abundant seed."

Distribution.—Southeastern Asia from India to China and through the Malay Archipelago and Polynesia to Australia.

31720. NORMANBYA MUELLERI Becc.**Palm.**

From Manila, Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 9, 1911.

"*Bonga de China.* A palm cultivated throughout the Philippine Islands, but its origin is unknown. It much resembles the betel-nut palm but has glaucous leaves and smaller, bright-crimson fruits about an inch long." (*Piper.*)

Distribution.—A palm found in the valley of the Daintree River in the province of Queensland, Australia, and cultivated in the Philippines.

31721 to 31723. CUCUMIS MELO L.**Muskmelon.**

From Comendador, Dominican Republic. Presented by Mr. M. E. Beall. Received August 24, 1911.

Seeds of the following; quoted notes by Mr. Beall:

31721. "This melon measured 31 centimeters [1 ft.] from stem to blossom end and 46 centimeters [14 in.] around the middle. Flesh green, firm but tender, of delicious flavor. I never tasted a better one. It does not need to be improved, and if it produces in the United States, the Rocky Ford will have to take a back seat."

31722. "This melon weighed 15 pounds, measured 23.6 inches from stem to blossom end, and 23.2 inches around the middle. Flesh thick, salmon colored, of good flavor. I am told that there are larger ones of this variety, but I have not seen them."

31723. "Small muskmelon or canteloupe, a little larger than a Rocky Ford. Skin not very firm, flesh greenish, not particularly fine flavored. Might be of value for hybridizing work."

31725. PISTACIA INTEGERRIMA Stewart.**Zebra wood.**

From Lahore, India. Procured by Mr. R. S. Woglum, of the Bureau of Entomology, United States Department of Agriculture, from Mr. W. R. Mustoe, Superintendent of the Botanical Gardens. Received August 24, 1911.

"These seeds were taken from a splendid specimen of a tree in the Agri-Horticultural Gardens." (*Woglum.*)

See No. 18637 for description.

Distribution.—On the mountain slopes in the northwestern part of India at an elevation of 1,200 to 8,000 feet; cultivated in the plains.

31726. CITRUS AURANTIUM SINENSIS L.**Orange.**

From Bahia, Brazil. Presented by Mr. Southard P. Warner, American consul. Received August 25, 1911.

Bahia navel. See Nos. 24311 and 30201 for previous introductions.

31727. VOANDZEIA SUBTERRANEA (L.) Thouars.**Woandsu.**

From Portuguese East Africa. Presented by Mr. R. H. B. Dickinson, Department of Agriculture, Salisbury, Southern Rhodesia. Received August 14, 1911.

See No. 23453 for description.

31728 to 31735.

From China. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 21, 1911.

Seeds of the following; quoted notes by Mr. Piper:

31728. PHASEOLUS CALCARATUS Roxb.

"From the market in Canton, said to be grown in the neighborhood."

31729. DOLICHOS LABLAB L.**Bonavist bean.**

"From the market in Canton, said to be grown about Tientsin."

31730 and 31731. CLAUCENA LANSIUM (Lour.) Skeels.**Wampee.**

"Both of these varieties were purchased in the market at Canton, where they occur in great abundance at this season (July). The former is an acid variety, the fruit as large as a muscat grape, but tapering to the apex. The latter is sweet, a little smaller, and perfectly ellipsoid. Both are greenish yellow in color and normally contain five (?) seeds, but the sour one rarely has more than one seed. The fruit is only of mediocre quality, but the Chinese eat large quantities of it."

See Nos. 25546 and 27954 for previous introductions.

31732. MANGIFERA INDICA L.**Mango.**

"*Hamow*. From Canton. Said to be the best mango grown in South China. Fruit a rich apricot color, without blemish, about 2½ inches long, 2 inches broad, and 1½ inches thick; snout short, blunt; flesh apricot color, watery, and with little flavor, not at all turpentiney; skin thin, not peeling easily; not much fiber; stone large. A very attractive fruit, but in quality not to be compared with Manila mangos."

31733. PRUNUS SIMONII Carr.

"Common in the markets of Canton and Hongkong. Fruit subglobose, greenish; flesh red. Very good when stewed."

31734. PRUNUS TRIFLORA Roxb.

"Like the preceeding but smaller and quite red on the surface."

31735. RUBUS sp.

"An ornamental variety with grapelike leaves, rusty tomentose beneath. Fruit red, small."

31736. CAJUPUTI LEUCADENDRA (Stickman) Rusby. Cajuput tree.

See No. 30761 for explanation of the necessity for using the generic name Cajuputi.

From Sydney, New South Wales, Australia. Presented by Mr. J. H. Maiden, director, Botanic Gardens. Received August 29, 1911.

"This is a myrtaceous tree closely related to the eucalyptus. Present indications are that the tree will prove very valuable for avenue planting and windbreaks in southern Florida. It is a rapid grower and adapts itself readily to different conditions of soil and surroundings. It is able to withstand the effects of salt spray and is not

hurt by occasional tidal overflows. Trees set out as small seedlings in 1909 at Coconut Grove, Fla., have bloomed and produced this season (1911) after reaching a height of about 15 to 20 feet." (*H. F. Schultz.*)

Distribution.—From India southeastward through the Malay Archipelago to Australia.

31737. ZIZIPHUS JUJUBA Miller.

Jujube.

From Chugutchak, Mongolia. Received through Mr. Frank N. Meyer, agricultural explorer, August 18, 1911.

"(May 4, 1911.) Very large Chinese jujubes, several varieties mixed. Said to come from Honan Province, north-central China." (*Meyer.*)

31738. ACANTHOSICYOS HORRIDA Welw.

Narras.

From Windhoek, German Southwest Africa. Presented by the German Government. Received July 26, 1911.

See No. 31401 for description.

31739. CASTILLA sp. (?)

Central American rubber.

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional, September 1, 1911.

Seeds.

31740. CITRUS AURANTIUM SINENSIS L.

Orange.

From Avery Island, La. Presented by Mr. E. A. McIlhenny, at the request of Mr. C. W. Ward. Received September 5, 1911.

"Bud wood from a seminaivel orange. This orange is the size of the Washington Navel, has a very thin skin and two or three seeds, but is decidedly similar in shape and outward appearance to the Washington Navel." (*McIlhenny.*)

31741 to 31747.

From Chile. Presented by Mr. Andrew Kerr, American consular agent, Coquimbo, Chile. Received January 5, 1911. Numbered September 5, 1911.

Plants of the following:

31741. EUGENIA LUMA (Mol.) Berg.

"*Meli.*"

Distribution.—A tree found in Chile from the vicinity of Concepcion southward to the island of Chiloe.

31742. EUGENIA sp.

"*Arrayan.*"

31743. CALDCLUVIA PANICULATA (Cav.) Don.

"*Tiaca.*"

31744. PHILESIA MAGELLANICA Gmelin.

"*Coi Copihue.*"

Distribution.—The coast of South America from Chile to the Straits of Magellan.

31745 to 31747. (Undetermined.)

31745. "*Boqui.*"

31747. "*Tepú.*"

31746. "*Chin-Chin.*"

31748. EUCLEA RACEMOSA Murray.

From Cape Town, South Africa. Presented by Mr. T. F. Dreyer, assistant entomologist, Department of Agriculture, Cape of Good Hope. Received September 5, 1911.

See No. 9620 for description.

Distribution.—The southern and western districts of South Africa.

31751. ANACARDIUM OCCIDENTALE L.**Cashew.**

From Inhamban, Portuguese East Africa. Presented by Mr. P. W. Keys, superintendent, Limpopo District Methodist Episcopal Mission. Received September 6, 1911.

31753 and 31754.

From Kew, England. Procured from the Herbaceous Garden at Kew by Prof. William R. Lazenby, Ohio State University, Columbus, Ohio. Received August 31, 1911.

Seeds of the following; quoted notes by Prof. Lazenby:

31753. PHYSALIS IXOCARPA Brot.

"This is the most promising *Physalis* I have seen."

31754. SOLANUM NIGRUM L.**Nightshade.**

"Variety *douglasii*. This looks much like what we have grown in Ohio under the name 'garden huckleberry.'"

31755. PRUNUS ARMENIACA L.**Apricot.**

From Merv, Russian Turkestan. Presented by Mr. W. W. Mackie, director, Yaqui Valley Experiment Station, Esperanza, Sonora, Mexico, who secured them in May, 1911. Received September 7, 1911.

Arak.

Seeds.

31758. COFFEA DEWEYREI Wildem. and Dur.**Coffee.**

From the Kongo. Presented by the Minister for the Colonies, Brussels, Belgium, at the request of Mr. Émile de Wildeman, conservator, Botanical Gardens, Brussels. Received September 8, 1911.

Distribution.—A tall tree found in the Kongo region of western Africa.

31759. MANGIFERA INDICA L.**Mango.**

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received September 8, 1911.

Baramasee (?).

31760. MANGIFERA INDICA L.**Mango.**

From St. George, Grenada, British West Indies. Purchased from Mr. Gilbert Auchinleck, Superintendent of Agriculture, Grenada Agricultural Department. Received September 11, 1911.

"*Grenada Ceylon No. 1.*"

Plant.

31761. BAMBOS ARUNDINACEA Retz.**Bamboo.**

From Lansdowne, United Provinces, India. Procured from the Lansdowne Forest Division Office by Mr. W. R. Mustoe, superintendent, Botanic Gardens, Lahore, India, and presented by him through Mr. R. S. Woglum, of the Bureau of Entomology, United States Department of Agriculture. Received August 24, 1911.

Introduced for the work of this office in the trial of suitable bamboos for cultivation as an important timber supply in the Southern States.

31763. MANGIFERA INDICA L.**Mango.**

From Darbhanga, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden, Sibpur, Calcutta, India. Received August 23, 1911. Numbered September 13, 1911.

Baboony.

Plants.

31764 and 31765. HORDEUM spp.**Barley.**

From the hills in the Simla district of the Punjab, India. Presented by Mr. Bernard Coventry, Officiating Inspector General of Agriculture in India, Pusa. Received September 13, 1911.

Seeds of the following; quoted notes received with seed:

31764. HORDEUM sp.

Awnless barley.

"*Kharsila.*"

31765. HORDEUM sp.

Hooded barley.

"*Haua.*"

"The origin of these varieties is not known. The crop is used both as human and animal food. There are no special methods of cultivation of this crop, and the usual methods obtaining in the hills for the cultivation of winter cereals is followed. Briefly, these consist in thoroughly preparing the soil in the monsoon by repeated ploughings and harrowings. A light dressing of cattle manure or house sweepings, if available, is given in August and the seed is sown broadcast in October. Very little care is required after sowing, except irrigation if possible, and the crop matures in five and one-half to six months. The average outturn of barley is 1,200 pounds per acre."

31766. LEUCAENA GLAUCA (L.) Benth.

From Brazil. Presented by Mr. Clinton D. Smith, Escola Agricola Practica "Luiz de Queiro," Piracicaba, Brazil. Received April 5, 1911. Numbered September 15, 1911.

See Nos. 755, 8998, and 23340 for previous introductions.

31767. INTSIA sp.

From Lawang, Java. Presented by Mr. M. Buysman. Received August 18, 1910. Numbered September 15, 1911.

Seeds.

31768. DAHLIA sp.

From Brazil. Presented by Mr. E. G. Swain, Diamantino, Brazil. Received July 24, 1911. Numbered September 15, 1911.

"A mixed-colored dahlia, red and white flowers, imported from Portugal." (*Swain.*)

31769 and 31770.

From China. Presented by Mr. T. M. Wilkinson, Foochow, China. Received July 5, 1911. Numbered September 15, 1911.

Seeds of the following; quoted notes by Mr. Wilkinson:

31769. QUERCUS sp.

Oak.

31770. ERIOBOTRYA JAPONICA (Thunb.) Lindl.

Loquat.

"*Beba*. This fruit tree begins to bloom the last of November and during the month of December. It has been in fruit for the last three weeks (May 16, 1911). The leaf is about 6 inches long and an inch and a half wide, has numerous ribs, and is dark green in color. The tree is inclined to grow straight and tall, the branches coming out of the main trunk at regular intervals and three, five, or seven of them at a time."

31771. (Undetermined.)

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August, 1911. Numbered September 15, 1911.

Seeds.

31772. BROMELIA sp.

Bromelia.

From Chile. Presented by Mr. José D. Husbands, Limavida, via Molina, Chile.

Received August 14, 1911. Numbered September 15, 1911.

"From Coquimbo. This looks like a new class of *chupones* (Bromelia). These plants will probably be found to have some ornamental or economic value." (*Husbands*.)

Seeds.

31773. GEONOMA sp.

Palm.

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional.

Received September 14, 1911.

This is probably the same species as No. 31930, but may be distinct.

Seeds.

31774. SOLANUM NIGRUM L.

Nightshade.

From Kew, England. Presented by Dr. David Prain, director, Royal Botanic Gardens. Received September 14, 1911.

Introduced for breeding experiments.

Seeds.

31775. CITRULLUS VULGARIS Schrad.

Watermelon.

From Changchu, near Soochow, China. Presented by Mr. N. Gist Gee, Soochow, China. Received September 14, 1911.

"*Mo Ling Quo* (horse-bell melon). Best grown at Changchu." (*Gee*.)

31776. CARYOPHYLLUS AROMATICUS L.

Clove.

From Port of Spain, Trinidad, British West Indies. Presented by the director, Botanical Department, Department of Agriculture. Received September 19, 1911.

See No. 27680 for description.

Seeds.

31779. POPULUS HETEROPHYLLA L.**Poplar.**

From Worcester County, Md. Collected 5 miles northeast of Pocomoke, by Mr. Ivar Tidestrom, of this Department, September 18, 1911. Received September 20, 1911.

"Native of eastern North America. Grows to a height of 30 feet or more, with a straight trunk." (*Tidestrom.*)

31780 to 31832.

Received through Mr. Frank N. Meyer, agricultural explorer, September 11, 1911.

Seeds of the following:

31780. TRITICUM AESTIVUM L.**Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1471a, November 23, 1910.) A very fine variety of red winter wheat called *Kizil boogdai*.

"The wheats of Khotan are celebrated in Chinese Turkestan for their excellence and for the fine taste they impart to the bread baked from them. All these wheats are raised under irrigation and very often on land that is quite saline." (*Meyer.*)

31781. TRITICUM AESTIVUM L.**Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1472a, November 24, 1910.) A good, hard, white, winter wheat called *Ak mecca boogdai*. Said to have been introduced from Mecca." (*Meyer.*)

31782. TRITICUM AESTIVUM L.**Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1473a, November 23, 1910.) A very fine quality of white, summer wheat called *Ak-boogdai*." (*Meyer.*)

31783. TRITICUM AESTIVUM L.**Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1474a, November 23, 1910.) A large variety of red, summer wheat called *Kizil boogdai*." (*Meyer.*)

31784. TRITICUM AESTIVUM L.**Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1475a, November 24, 1910.) A red, summer wheat called *Kizil boogdai*." (*Meyer.*)

31785. TRITICUM AESTIVUM L.**Wheat.**

From San Kia, Chinese Turkestan.

"(No. 1476a, November 17, 1910.) A fine quality of summer wheat grown on light, sandy soil." (*Meyer.*)

31786. TRITICUM AESTIVUM L.**Wheat.**

From Pi-yalma, Chinese Turkestan.

"(No. 1477a, November 18, 1910.) A fine quality of summer wheat grown like No. 1476a (S. P. I. No. 31785)." (*Meyer.*)

31787. TRITICUM AESTIVUM L.**Wheat.**

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1478a, December 4, 1910.) A good, white, summer wheat called *Andishan boogdai*. Said to have come originally from Andishan." (*Meyer.*)

31780 to 31832—Continued.

31788. TRITICUM AESTIVUM L.

Wheat.

From Burya Lyang, Chinese Turkestan.

“(No. 1479a, December 8, 1910.) A red, summer wheat called *Kizil boog-dai*.” (Meyer.)

31789. TRITICUM AESTIVUM L.

Wheat.

From Karawag, Chinese Turkestan.

“(No. 1480a, December 10, 1910.) A rare local variety of white, summer wheat having very large grains, called *Ak-boogdai*.” (Meyer.)

31790. TRITICUM AESTIVUM L.

Wheat.

From Karghalik, Chinese Turkestan.

“(No. 1481a, December 12, 1910.) A local variety of red, hard wheat called *Kizil boogdai*.” (Meyer.)

31791. TRITICUM AESTIVUM L.

Wheat.

From Kashgar, Chinese Turkestan.

“(No. 1482a, October 23, 1910.) A good quality of Kashgar wheat called *Kizil boogdai*.”

“All of these wheats, having been raised for centuries in an arid climate under irrigation, may thrive better in the hot southwestern parts of the United States than anywhere else; still they might also be given a trial in cooler arid and semiarid regions, but should not be tested in the humid eastern sections.” (Meyer.)

31792. HORDEUM VULGARE L.

Barley.

From Nusi, Chinese Turkestan.

“(No. 1483a, November 28, 1910.) A winter barley called *Chilgà arpa*. Able to withstand considerable drought and alkali.” (Meyer.)

31793. HORDEUM sp.

Hull-less barley.

From Khanaka, Oasis of Sandju, Chinese Turkestan.

“(No. 1484a, December 4, 1910.) Summer barley, grown on rather sandy land at an elevation of over 6,000 feet above sea level.” (Meyer.)

31794. HORDEUM VULGARE HIMALAYENSE Rittig.

Hull-less barley.

From Pushki, Chinese Turkestan.

“(No. 1485a, December 1, 1910.) A blue, hull-less, summer barley called *Kok-arpa*. Grown in a dry, cool region under irrigation.” (Meyer.)

31795. HORDEUM sp.

Hull-less barley.

From Pudskya, Chinese Turkestan.

“(No. 1486a, November 29, 1910.) A very fine variety of white, hull-less, summer barley called *Ak-arpa*. The flour made from this is used mixed with wheat flour for bread making. It is generally sown very early, as soon as the frost leaves the ground.” (Meyer.)

31796. HORDEUM sp.

Hull-less barley.

From Pustan Terek, Chinese Turkestan.

“(No. 1487a, December 29, 1910.) An excellent large variety of hull-less summer barley, grown by the Kirghiz in mountain valleys at altitudes from 6,000 to 7,000 feet. The flour of this barley mixed with wheat flour gives the little loaves baked from it remarkable nourishing and sustaining qualities. To be tested in the rocky and intermountain regions of the United States.” (Meyer.)

31780 to 31832—Continued.

31797. *CICER ARIETINUM* L.

Chick-pea.

From Khokan, Russian Turkestan.

"(No. 1489a, September 28, 1910.) A small variety of chick-pea called *Oh-nagh*, apparently one of the more primitive strains of garbanzos. Grown on the rather alkaline lands around Khokan. Eaten boiled in soups and meat stews." (Meyer.)

31798. *CICER ARIETINUM* L.

Chick-pea.

From Khokan, Russian Turkestan.

"(No. 1490a, September 28, 1910.) A brown variety of chick-pea called *Kizil nagh*. Apparently a very primitive strain. Eaten like the preceding number, but retails at only half the price. May be tested as a forage crop on the alkaline lands of the warmer sections of the United States." (Meyer.)

31799. *VIGNA SINENSIS* (Torner) Savi.

Cowpea.

From Khotan, Chinese Turkestan.

"(No. 1491a, November 26, 1910.) A rather small variety of cowpea grown for human food. To be tested under irrigation in the desert regions of the United States." (Meyer.)

31800. *VIGNA SINENSIS* (Torner) Savi.

Cowpea.

From Karghalik, Chinese Turkestan.

"(No. 1492a, December 12, 1910.) A yellowish variety of cowpea called *Shou to*. To be tested like No. 1491a (S. P. I. No. 31799)." (Meyer.)

31801. *VIGNA SINENSIS* (Torner) Savi.

Cowpea.

From Yarkand, Chinese Turkestan.

"(No. 1493a, December 18, 1910.) A rare local variety of cowpea, having brown mottled seeds. Eaten stewed with meats. To be tested like No. 1491a (S. P. I. No. 31799)." (Meyer.)

31802. *GLYCINE HISPIDA* (Moench) Maxim.

Soy bean.

From Karghalik, Chinese Turkestan.

"(No. 1494a, December 12, 1910.) A large, green variety of soy bean called *Ching tou*, used when slightly salted and roasted as an appetizer before meals. To be tested like No. 1491a (S. P. I. No. 31799)." (Meyer.)

31803. *GLYCINE HISPIDA* (Moench) Maxim.

Soy bean.

From Kashgar, Chinese Turkestan.

"(No. 1495a, October 23, 1910.) A black soy bean, used like No. 1494a (S. P. I. No. 31802), and also used to make bean curd. To be tried like No. 1491a (S. P. I. No. 31799)." (Meyer.)

31804. *GLYCINE HISPIDA* (Moench) Maxim.

Soy bean.

From Karghalik, Chinese Turkestan.

"(No. 1496a, December 12, 1910.) A large, black soy bean called *Ghae tou*. Used like No. 1494a (S. P. I. No. 31802)." (Meyer.)

31805. *PISUM SATIVUM* L.

Pea.

From San-Kia, Chinese Turkestan.

"(No. 1497a, November 17, 1910.) A small green pea called *Puchok*. Sown early on sandy lands, mostly between wheat. They are eaten boiled in soups and also ground and baked in bread. To be tested as a summer forage crop in the intermountain and Rocky Mountain regions or as a winter crop in moist, mild-winter sections of the United States." (Meyer.)

31780 to 31832—Continued.

31806. *PISUM ARVENSE* L.

Field pea.

From Khotan, Chinese Turkestan.

“(No. 1498a, November 26, 1910.) Various varieties of peas mixed. Grown as an early crop on light, sandy, alkaline lands. See remarks under the preceding number.” (Meyer.)

31807. *PISUM ARVENSE* L.

Field pea.

From Pushki, Chinese Turkestan.

“(No. 1500a, December 1, 1910.) A small speckled pea called *Puchok*. Grown between wheat on sandy lands. See also remarks under No. 1497a (S. P. I. No. 31805).” (Meyer.)

31808. *PISUM ARVENSE* L.

Field pea.

From Khanaka, Oasis of Sandju, Chinese Turkestan.

“(No. 1501a, December 4, 1910.) A small speckled pea sown on rather light soils between barley. See also remarks under No. 1497a (S. P. I. No. 31805).” (Meyer.)

31809. *PISUM SATIVUM* L.

Pea.

From Pudskiya, Chinese Turkestan.

“(No. 1502a, November 29, 1910.) A pea called *Puchok*, sown on rather sandy and alkaline soils between wheat. See remarks under No. 1497a (S. P. I. No. 31805).” (Meyer.)

31810. *LATHYRUS SATIVUS* L.

From Pudskiya, Chinese Turkestan.

“(No. 1503a, November 29, 1910.) A legume called *Kara puchok*, meaning black pea, sown on light, alkaline soils between wheat. The seeds are eaten as food, boiled in soups or ground and mixed with wheat flour and baked into little loaves. I asked especially about the supposed poisonous effects of this legume, but the natives said they never heard of it. To be tested like No. 1497a (S. P. I. No. 31805).” (Meyer.)

31811. *MEDICAGO SATIVA* L.

Alfalfa.

From Khotan, Chinese Turkestan.

“(No. 1504a, November 24, 1910.) A variety of alfalfa called *Chilga beda*, meaning fibery lucern. This variety seems to need less irrigation than the following number. A tall grower; stems erect, slightly woody; leaves rather small; good for hay.” (Meyer.)

31812. *MEDICAGO SATIVA* L.

Alfalfa.

From Khotan, Chinese Turkestan.

“(No. 1505a, November 24, 1910.) A variety of alfalfa called *Kara beda*, meaning black lucern. Leaves large, dark green; stems succulent, not very high growing. Not as good for hay as the preceding number; however, it supplies green fodder until frost, while the *Chilga* variety stops growing at the end of summer. It is not able to stand as severe cold as the *Chilga*.” (Meyer.)

31813. *MEDICAGO SATIVA* L.

Alfalfa.

From Kashgar, Chinese Turkestan.

“(No. 1506a, January 14, 1911.) An alfalfa called *Kara beda*. In Kashgar this is considered the better of two varieties. It is apparently the same as the *Chilga beda* from Khotan.” (Meyer.)

31780 to 31832—Continued.

31814. *MEDICAGO SATIVA* L.

Alfalfa.

From Kashgar, Chinese Turkestan.

"(No. 1507a, January 14, 1911.) An alfalfa called *No beda*, meaning hollow lucern, on account of the stems being succulent and hollow. Seems to be the same as the *Kara* from Khotan.

"As vegetable culture stands on a very low level in Chinese Turkestan and as early vegetables do not exist, both foreign residents and natives eat the young alfalfa sprouts prepared like spinach, which vegetable they are said to resemble very much in taste and looks." (*Meyer.*)

31815. *MEDICAGO SATIVA* L.

Alfalfa.

From Khanaka, Oasis of Sandju, Chinese Turkestan, 6,000 feet altitude.

"(No. 1508a, December 4, 1910.) An alfalfa called *Chilga beda*, apparently the same as No. 1504a (S. P. I. No. 31811). This variety of alfalfa ripens seed here in small quantities only, while the *Kara beda*, No. 1505a (S. P. I. No. 31812), never ripens at all and seeds have to be imported from Guma, situated at 4,000 feet elevation above sea level. This number therefore may show unusually hardy qualities and ought to be tested in a dry, cold region." (*Meyer.*)

31816. *CANNABIS SATIVA* L.

Hemp.

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1511a, December 4, 1910.) A small-seeded variety of hemp called *Kandivi*. The oil expressed from the seeds is used for culinary and illuminating purposes. The fiber is not generally utilized, except for some very inferior rope that here and there is made from it. From the young tops, however, the hashish is made, and many are the victims addicted to the smoking of this narcotic." (*Meyer.*)

31817. *LINUM USITATISSIMUM* L.

Flax.

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1512a, December 4, 1911.) Native name *Sigger*. Flax is extensively cultivated in both Russian and Chinese Turkestan, not for its fiber, however, but solely for the oil the seeds yield. The oil is much used in the native cooking, while the Russian settlers in central Asia have also become used to it. This linseed oil when fresh is a very palatable oil and can be used with excellent results in the frying of fish, doughnuts, pancakes, etc.

"Flax for its oil-yielding capacities seems to be very promising as a crop for those sections of the United States where the summers are short and dry, especially the mountainous western part and in the outlying districts where settlers have to grow what they need as much as possible.

"Linseed oil is much easier digested than cottonseed oil and ought to be tested as human food." (*Meyer.*)

31818. *LINUM USITATISSIMUM* L.

Flax.

From Tashmalah, Chinese Turkestan.

"(No. 1513a, December 23, 1910.) Variety *semina lutea*. A variety with light-yellow seeds. Used for the same purpose as No. 1512a (S. P. I. No. 31817). Native name *Sigger*." (*Meyer.*)

31819. *ERUCA SATIVA* Hill.

Roquette.

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1514a, December 4, 1910.) Native name *Sa-un*. A variety of rape seed, the oil of which is used both for culinary and illuminating purposes. To be tested as a possible crop for the intermountain regions." (*Meyer.*)

31780 to 31832—Continued.

31820. *ERUCA SATIVA* Hill.

Roquette.

From Karawag, Chinese Turkestan.

"(No. 1515a, December 10, 1910.) A variety slightly different from No. 1514a (S. P. I. No. 31819); also comes from a warmer locality. Native name *Sa-un*. The same remarks as made under No. 1514a (S. P. I. No. 31819) apply also to this one." (*Meyer.*)

31821. *BRASSICA NAPUS* L.

Mustard.

From Khasan-dugra, Chinese Turkestan.

"(No. 1516a, December 7, 1910.) A mustard which is said to grow very tall. Likes a somewhat alkaline soil. An oil that is used to smear over bread in the baking process is expressed from the seeds. To be tested with care, as it may be of a weedy disposition." (*Meyer.*)

31822. *ELAEAGNUS ANGUSTIFOLIA* L.

Oleaster.

From Upal, Chinese Turkestan.

"(No. 1546a, December 31, 1910.) The oleaster is mostly seen as a tall shrub, but in good situations it grows sometimes to be a fair-sized tree. All things considered, it is perhaps the most useful tree in Chinese Turkestan. When well kept it supplies excellent hedges, almost impenetrable to man and beast. From the branches stuck in the ground in slanting and zigzag fashion, very good temporary fences can be made. As a windbreak it is unexcelled, keeping the drying desert winds off the cultivated lands of the oasis. As a sand binder it is of great value, checking blowing and encroaching desert sands to a great extent; also where washouts are experienced, its masses of fibrous roots retain the soil to a great extent.

"In many oases its wood constitutes the chief fuel supply, and to furnish this firewood the trees are pollarded every four to six years without suffering. The wood, when dry, possesses fine heating qualities and makes a good bed of live coals which lasts the whole night when covered up with ashes.

"The fruits of the wild form are too small and too astringent to be of any value to man, but some of the cultivated forms supply a sweetmeat to children. The dry cast-off leaves are a favorite food of sheep, goats, donkeys, and cattle. The flowers possess a remarkably sweet odor and seem to be rich in honey.

"Its highly ornamental qualities combined with drought and alkali resistant capacities put it in the first class as a desirable garden and park shrub or tree in the more arid parts of the United States. Its silvery-gray foliage resembles the olive very much, while in autumn the contrast between it and the multitude of generally orange-red small fruits is gloriously beautiful.

"The habit of this oleaster is extremely variable, the majority of the trees drooping gracefully when becoming old; some, however, assume quite rigid outlines. The size of the fruit also varies considerably, ranging from that of a pea up to an ordinary date. The berries vary from pure white on some trees to dark brownish red on others. Even in the leaves there is considerable variation in size, nuances of grayish green, and the relative quantity a tree may possess.

"The roots are sometimes a mass of nodules and, as the trees often grow quite luxuriantly even in pure sand, they seem to derive nutrition from these tubercles and, perhaps, even fertilize the soil to some extent. One notices, for instance, that crops, though close up to a row of oleaster trees, are not impoverished to any extent. For this reason the natives of central Asia seem to prefer this tree to any other sort of windbreak. The plants are able to grow in pure

31780 to 31832—Continued.**31822—Continued.**

sand or in alkaline soils, and while they can exist with very little water they do not grow luxuriantly. They can not stand low, water-logged soils.

"Their propagation is easy; cuttings from the size of a lead pencil up to poles 6 feet long and 2 to 3 inches thick all strike roots easily, as long as the soil is moist enough to give them a chance. In those regions of the United States where the summers are very hot and dry and the winters are not too cold, where the soils are sandy or alkaline but where irrigation water is occasionally supplied, the oleaster deserves the highest consideration as a hedge plant, as a fence material, as a windbreak, as a sand binder, as a fuel supplier, and as a characteristic ornamental tree around the home." (*Meyer.*)

31823. ORYZA SATIVA L.**Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1571a, December 19, 1910.) A Chinese variety of glutinous rice called *Lo mi*. Originally introduced from eastern China, now sparingly grown around Yarkand. It is considered a very fine variety and almost twice as expensive as other rices.

"This and the following varieties of rices should be tested in the western sections of the United States. They are all grown in standing water and the soil in which they thrive is generally well charged with alkali. Rice is a rather expensive food in Chinese Turkestan on account of the scarcity of water, which could be employed for other crops, but the people as a whole are so fond of it that they are willing to make many sacrifices for it. Several local varieties have been developed during the long period of human occupation, and some of the best are being offered here." (*Meyer.*)

31824. ORYZA SATIVA L.**Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1572a, December 19, 1910.) A variety of rice called *Khotan Dowsera*. The grains become large and very white when boiled, and this variety is considered very good." (*Meyer.*)

31825. ORYZA SATIVA L.**Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1573a, December 19, 1910.) A variety of rice called *Ak-zu*; has red beards. Said to be very white and plump when boiled." (*Meyer.*)

31826. ORYZA SATIVA L.**Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1574a, December 14, 1910.) A variety of rice called *Kara Kiltrick*; has black beards." (*Meyer.*)

31827. ORYZA SATIVA L.**Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1575a, December 19, 1910.) A variety of rice called *Yarkand Dowsera*; has white beards. It is considered the best variety locally, as it has about the same qualities as the *Khotan Dowsera* (No. 31824.)" (*Meyer.*)

31828. ORYZA SATIVA L.**Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1576a, December 19, 1910.) A variety of rice called *Sarich Kiltrick*; has yellow beards, but white seeds." (*Meyer.*)

31780 to 31832—Continued.

31829. *ORYZA SATIVA* L.

Rice.

From Kashgar, Chinese Turkestan.

“(No. 1577a, January 27, 1911.) A variety of rice called *Ak-uruk*; has large, white grains.” (Meyer.)

31830. *ORYZA SATIVA* L.

Rice.

From Kashgar, Chinese Turkestan.

“(No. 1578a, January 27, 1911.) A variety of rice called *Chilga*; of light milling qualities. Considered locally a marvel, as it ripens in 10 weeks after being sown. It is grown as a second crop after the winter wheat has been harvested.” (Meyer.)

31831. *ORYZA SATIVA* L.

Rice.

From Kashgar, Chinese Turkestan.

“(No. 1579a, January 27, 1911.) A variety of rice called *Kara Kiltrick*. It has white beards and is very different from the same variety of Yarkand (No. 31826).” (Meyer.)

31832. *ORYZA SATIVA* L.

Rice.

From Kashgar, Chinese Turkestan.

“(No. 1580a, February 1, 1911.) A variety of rice called *Tum-uruk*. Considered to be a very good sort. Early ripener. White and reddish grains are said to exist intermixed in this variety.” (Meyer.)

31835 to 31864.

From the Natal Botanic Gardens, Durban, Natal, South Africa. Presented by Dr. J. Medley Wood, director, Natal Botanic Gardens. Received July 15, 1911.

Seeds of the following:

31835. *ASPARAGUS FALCATUS* L.

Asparagus.

An ornamental flowering climber with creamy-white sweet-scented flowers in large panicles.

Distribution.—In the island of Ceylon, and in tropical and southern Africa, extending from Nubia and Upper Guinea southward to the Cape.

31836. *BAUHINIA PICTA* (H. B. K.) DC.

See No. 21783 for description.

31837. *BOSCHIA UNDULATA* Thunb.

See No. 28719 for previous introduction.

31838. *BRUNSFELSIA AMERICANA* L.

See No. 28720 for previous introduction.

31839. *CALPURNIA AUREA* (Lam.) Benth.

See No. 28721 for previous introduction.

31840 and 31841. *CARISSA* spp.

Introduced in order to extend the cultivation of these important home-garden fruits for the Southern States.

31840. *CARISSA BISPINOSA* (L.) Desf.

Distribution.—Central southern Africa, extending from Rhodesia and the Mozambique district southward to the Cape.

31841. *CARISSA GRANDIFLORA* (Mey.) DC.

Amatungulu.

31835 to 31864—Continued.

31842. *CHRYSOPHYLLUM VIRIDIFOLIUM* Wood and Franks.

Distribution.—A tree found in the woods in the vicinity of Durban in Natal, Africa.

31843. *CRACCA GRANDIFLORA* (Ait.) Kuntze.

Distribution.—A leguminous shrub with red flowers found along the eastern coast of South Africa from Durban to Uitenhage.

31844. *CROTALARIA GRANTIANA* Harvey.

Distribution.—A small, slender, leguminous plant found in the vicinity of Durban in South Africa.

31845. *CRYPTOCARYA WOODII* Engler.

Distribution.—In the woods in the vicinity of Durban, South Africa.

31846. *DRACAENA RUMPHII* (Hook.) Regel.

See No. 28724 for previous introduction.

31847. *GLORIOSA SIMPLEX* L.

Distribution.—Tropical and South Africa, extending from Upper Guinea and the Nile land southward to the Cape.

31848. *INDIGOFERA* sp.31849. *LITTONIA MODESTA* Hook. f.

Distribution.—A tuberous-rooted climbing vine belonging to the family Melanthiaceæ, and growing in the Kalahari region and in the vicinity of Durban in South Africa.

31850. *MILLETTIA GRANDIS* (E. Meyer) Skeels.

(*Virgilia grandis* E. Meyer 1835, *Commentariorum de Plantis Africae Australioris*, vol. 1, p. 1.)

(*Millettia caffra* Benth. 1843, *Journal of Botany*, London, vol. 2, p. 99.)

This South African leguminous tree was first named *Virgilia grandis* by E. Meyer in 1835, and later was given the name *Millettia caffra* by Benthham, who apparently did not know of the earlier name. In accordance with present rules of botanical nomenclature the earliest specific name, *grandis*, is here restored.

Millettia grandis is found on the rocky slopes of the mountains in the vicinity of Durban in South Africa.

31851. *MONDIA WHITEI* (Hook. f.) Skeels.

"It may be interesting to note that the fishermen at Fajao use as a line a fiber obtained from a climbing asclepiad (evidently *Chlorocodon whitei* [now *Mondia whitei*]) which is common in bushland throughout Unyoro. It has great strength and durability, a line about the size of an ordinary thread holding a fish from 4 to 6 pounds in weight. The roots of the same plant are eaten by the natives as a tonic, and are of a pleasant taste." (*Dawe, Economic Resources of Uganda*, p. 32.)

See No. 28730 for previous introduction.

31852. *MORAEA IRIDIODES* L.

See Nos. 13732, 28727, and 31258 for previous introductions.

31853. *OPHIOSTRYX VOLUBILIS* (Harvey) Skeels.

See No. 28729 for previous introduction.

31835 to 31864—Continued.

31854. *ORNITHOGALUM SAUNDERSIAE* Baker.

Distribution.—A white-flowered bulbous perennial growing in damp places among rocks at an elevation of 3,000 to 3,400 feet in the Kalahari region of South Africa.

31855. *ORNITHOGALUM THYRSOIDES* Jacq.

Distribution.—A bulbous plant with several varieties, having red, yellow, or white flowers, growing among the mountains along the eastern coast of Cape Colony.

31856. *OXYANTHUS PYRIFORMIS* (Hochst.) Skeels.

(*Megacarpa pyriformis* Hochst. 1844, *Flora*, vol. 27, p. 551.)

(*Oxyanthus natalensis* Sond. 1850, *Linnaea*, vol. 23, p. 50.)

The seeds of this South African rubiaceous shrub were received under the name *Oxyanthus natalensis*, a name given to the plant by Sonder, who transferred the species from the genus *Megacarpa* to which it was first assigned by Hochstetter in 1844. In transferring the species Sonder displaced the original specific name, *pyriformis*, which is here restored, in accordance with present rules of botanical nomenclature.

Oxyanthus pyriformis is known to occur only in the damp woods in the vicinity of Durban, South Africa.

31857. *PALLASIA CAPENSIS* Christm.

(*Calodendrum capense* Salberg 1782, in Thunberg, *Nova Genera Plantarum*, p. 43.)

The seeds of this large, evergreen South African tree, belonging to the family Rutaceæ, were received under the name *Calodendron capense*. The generic name *Calodendrum* was published by Salberg in 1782. However, in 1778, Christman (Houttyn, *Pflanzensystem*, vol. 3, p. 318, pl. 22) had published for the same plant the name *Pallasia capensis*. The name *Pallasia* was first used in 1777 by Scopoli (*Introductio*, p. 72) for a grass which had been described and figured in 1770 by Pallas (*Reise durch verschiedene Provinzen des russischen Reichs*, vol. 2, p. 733, pls. K., fig. 1, and Q., fig. 2), but to which no binomial name was given.

Scopoli also wrote "an hoc *Phleum Schoenoides* Linn.?", but this is not the species described, nor the one described and figured by Pallas. Scopoli, therefore, did not technically publish the generic name *Pallasia*, as he did not use a binomial name and did not refer to any description which is associable with a previously published binomial species. It is therefore necessary to use the name *Pallasia* for the genus generally called *Calodendron*.

Pallasia capensis, called "wild chestnut" by the colonists, is found in the woods along the eastern coast of South Africa from the vicinity of Durban southward to the Cape.

31858. *PSYCHOTRIA CAPENSIS* (Eckl.) Vatke.

Distribution.—An evergreen shrub or small tree found in the woods in the vicinity of Durban in South Africa.

31859. *SPHEDAMNOCARPUS PRURIENS* (Juss.) Szyszylowics.

Distribution.—A shrubby vine growing in the woods in the Transvaal region of South Africa.

31835 to 31864—Continued.**31860. STRELITZIA ALBA (L. f.) Skeels.**

(*Heliconia alba* L. f. 1781, Supplementum Plantarum, p. 157.)

(*Strelitzia augusta* Travenfeldt 1792, in Thunb., Nova Genera Plantarum, p. 113.)

This beautiful white-flowered plant belonging to the family Musaceæ was first named in 1781 by Linnæus's son as a species of *Heliconia*, with the specific name *alba*. Travenfeldt, in 1792, transferred the species to the genus *Strelitzia*, where it is generally considered to belong, but gave it a new specific name, *augusta*. The binomial *Strelitzia alba*, although the proper name of this plant, according to recognized nomenclatural practice, appears never to have been used heretofore.

Strelitzia alba is a well-known South African plant, occurring from Durban to the Cape of Good Hope.

31861. STRYCHNOS DECUSSATA (Pappe) Gilg.

Distribution.—A tree, attaining a height of 25 feet, the knotted twigs of which are used as ceremonial wands by the Zulu-Kafirs, is found on the eastern coast of South Africa from Durban to Uitenhage.

31862. TECOMA BERTEROI DC.

See No. 28728 for previous introduction.

31863. TURRAEA HETEROPHYLLA Smith.

Distribution.—A gray-barked shrub found in the woods in the vicinity of Durban in South Africa.

31864. TURRAEA OBTUSIFOLIA Hochst.

Distribution.—A shrub with reddish bark, growing in the woods in the vicinity of Durban in South Africa.

31865. BOUEA GANDARIA Blume.

From Singapore, Straits Settlements. Presented by the Botanical Garden at Singapore through Mr. Lyster H. Dewey, of the Bureau of Plant Industry, who brought them with him to this country on his return from abroad. Received September 20, 1911.

See No. 29383 for previous introduction.

31866. CORNUS BRETSCHNEIDERI Henry.

From Rochester, N. Y. Presented by Mr. John Dunbar, Assistant Superintendent of Parks. Received September 15, 1911.

This is a very ornamental shrub from the mountains of western China, especially striking in the winter against a background of evergreens, because of its bright lemon-yellow twigs. It has proven thoroughly hardy as far north as Rochester, N. Y.

See No. 30288 for previous introduction.

31868. HORDEUM sp.

Hull barley.

From Khanaka, Oasis of Sandju, Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, September 11, 1911.

This seed was picked out of No. 31793, a summer barley. See this number for remarks.

31869. ANNONA GLABRA L.**Alligator-apple.**

From Camaguey, Cuba. Presented by Mr. Robert L. Luáces, agricultural engineer, at the suggestion of Mr. G. P. Wilder, Honolulu, Hawaii. Received September 21, 1911.

See No. 26855 for previous introduction.

31870. PHORMIUM TENAX Forst.**New Zealand flax.**

From Pasadena, Cal. Presented by Mr. P. D. Barnhart. Received September 7, 1911.

31871. NICOTIANA TABACUM L.**Tobacco.**

From Guatemala City, Guatemala. Presented by Mr. S. Billow. Received September 13, 1911.

"The tobacco that is principally used here is brought from Honduras. However, the other day I noted a tobacco plant growing very luxuriantly in one of the parks and plucked some of the seed, which I am sending. I do not know anything about the variety, but the stalk did not show any signs of disease or attack by insects." (Billow.)

31872 to 31876.

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received September 23, 1911.

See notes of the following; quoted notes by Mr. Mead:

31872. ARISTOCLESIA ESCULENTA (Arruda) Stuntz.**Pacuri.**

(*Moronobea esculenta* Arruda 1810, Discurso Sobre a Utilidade da Instituição de Jardins nas Principaes Provincias do Brazil, p. 32; reprinted in Mello, Biographias de Joaquim Ignacio de Lima, etc., 1895.)

(*Platonia insignis* Mart. 1832, Nova Genera et Species Plantarum Brasiliensium, vol. 3, p. 169, pls. 288, fig. 2, and 289.

The seeds of this Brazilian tree, which belongs to the family Clusiaceæ, were received under the name *Platonia insignis*, which was applied to it by Martius in 1832. In 1808, however, Rafinesque (Medical Repository, vol. 5, p. 352) had published the generic name *Platonia*, based on *Verbena nodiflora* L., thus preventing the use of the same name for the tree described by Martius. This fact was recognized in 1909 by Coville, who published the new generic name *Aristoclesia* (Century Dictionary Supplement, p. 75). Martius described but one species, *Platonia insignis*, and cited *Moronobea esculenta* Arruda, which identification was indorsed in 1896 by Britten (Journal of Botany, vol. 34, p. 248). The earlier specific name is here restored.

"In Guarany this is called *pacuri*. It is very highly recommended as a delicious fruit, either fresh or in preserves. The plant grows 2 meters [6½ ft.] high and the fruit, which is larger than a cherry and nearly black in color, is borne in clusters about the main stalk. Frost resistance equal to the orange. Seed procured near Caballero, Paraguay."

Distribution.—*Aristoclesia esculenta* is found in the aboriginal forests of the Amazon Valley in the provinces of Para, Maranhao, and Ceara in Brazil.

31873. PSIDIUM GUAJAVA L.**Guava.**

"A native of South America. Found growing wild in the mountains in Paraguay. Same description as for other guavas sent (No. 31359). This seed was selected from the largest and finest fruits only."

31874. GOSSYPIUM sp.**Cotton.**

31872 to 31876—Continued.**31875 and 31876. ARACHIS HYPOGAEA L.****Peanut.****31875. Red.**

"This is called in Guarany *mandui colorado*, in Spanish *mani colorado*. A main-crop variety, but inferior in yield and quality to the white variety. Habit of growth same as the Virginia Runner; nuts though similar to the Tennessee Red in quality are nearly as large as the white peanut."

31876. White.

"This is called in Guarany *mandui blanca*, in Spanish *mani blanca*. Reported as a variety developed by Indians in Chaco, Paraguay, but I have doubts as to the truth of this. This is the best of the peanuts found here for main crop. A strong plant. Habits of growth similar to the Virginia Bunch and a heavy cropper. Pods large and well filled; as many as five nuts in one pod are commonly found."

31877 to 31878.

From Australia. Presented by Mr. James Pink, Wellington Point, near Brisbane, Queensland. Received September 26, 1911.

Seeds of the following; quoted notes by Mr. Pink:

31877. CITRUS AUSTRALIS (Cunn.) Planch.**Australian sour orange.**

"These were collected on the range of hills whence is the source of the Brisbane River, where in winter they occasionally get 10 to 15 degrees of frost in the early morning, but appear to suffer no harm therefrom."

31878. GREVILLEA BANKSII R. Br.

"One of the most beautiful flowering shrubs of Australia."

Distribution.—In rocky places along the coast of the province of Queensland, Australia, from Broad Sound southward to the vicinity of Brisbane.

31879. ANDROPOGON SCHOENANTHUS L.**Lemon grass.**

From Suva, Fiji Islands. Presented by Mr. Charles H. Knowles, Superintendent of Agriculture, Department of Agriculture. Received September 25, 1911.

See No. 29456 for description.

31880. ANNONA MURICATA L.**Soursop.**

From Redland Bay, Queensland, Australia. Presented by Mr. James Collins. Received September 25, 1911.

Grafted plants.

31881. CITRUS sp.**Orange.**

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received September 27, 1911.

"This is called *Naranja apepu*. Claimed by Paraguayans as the native wild orange, but is more likely a sport from *Citrus bigorada de grandes frutas*. The strongest growing and hardiest of all oranges here; seems to be affected by neither drought nor floods, heat or cold, and is free from all diseases common here. The fruit is large, neither sweet nor sour; skin very thick and free, used to some extent for oil and preserves. Tree grows to a height of 4 or 5 meters [13 or 16 ft.]. This seed came from a tree having a trunk 8 inches in diameter, which eight months ago was girdled 2 inches deep all around to kill it; fruit of this crop better than ever. This orange may be of use as a rootstock." (*Mead.*)

31882. MEIBOMIA sp.

From Puerto Bertoni, Paraguay. Presented by Dr. Moises S. Bertoni, Estacion Agronomica. Received September 18, 1911.

"This is a native species of Paraguay, very good for forage and extraordinarily resistant to drought. It grows well in any soil, even in the driest and most sterile." (Bertoni.)

31883. VACCINIUM ANGUSTIFOLIUM Aiton.**Blueberry.**

From Cape Breton Island, Nova Scotia. Received through Mr. David Fairchild, of the Bureau of Plant Industry, September 28, 1911.

These plants were introduced for purposes of botanical study and breeding work.

Distribution.—Northeastern America; Hudson Bay region, Labrador, and Newfoundland, and southward to the alpine slopes of the White Mountains in New Hampshire.

31884 to 31890. PHORMIUM TENAX Forst.**New Zealand flax.**

From Wellington, New Zealand. Presented by Mr. T. W. Kirk, director, Department of Agriculture. Received September 26 and 27, 1911.

Plants of the following:

31884. *Tamatea*.31888. *Huhiroa*.

31885. Seedling (no name).

31889. *Ngutunui*.31886. *Tutaemanu*.31890. *Wharariki*.31887. *Parekawariki*.**31891. ANNONA PURPUREA Moc. and Sesse.****Cabeza de negro.**

From Mexico. Presented by Mr. C. B. Waite, City of Mexico, Mexico. Received September 29, 1911.

"This fruit is not a very valuable one in my estimation, although it is esteemed by the natives. It is fragrant, stringy, yellow, almost insipid, and will average in weight about 3 pounds. It has skin, turning brown when ripe, and ripens in August and September. The trees are about 10 to 15 feet high. The pulp of the fruit clings to the seed, like the mango, but does not seem to have the strings growing out of the seed as the mango, but out of a sheath around the seed. It is common from Cordoba to Guatemala." (Waite.)

31892. MEDICAGO SATIVA L.**Alfalfa.**

From Peking, China. Presented by Mr. B. Laufer. Received September 28, 1911.

31893 to 31895. HORDEUM spp.**Barley.**

From Komaba, Tokyo, Japan. Presented by Dr. Y. Kozai, director, Agricultural College, Tokyo Imperial University. Received September 27, 1911.

Seeds of the following:

31893. "*Bozu*. Ordinary variety."31894. "*Ishadaka*. Naked variety."31895. "*Kawai*. Naked variety and having awns on two rows of spikelets only."

31897. ERAGROSTIS ABYSSINICA (Jacq.) Schrad.**Teff.**

From the Transvaal, South Africa, at an elevation of 5,000 feet. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria. Received September 30, 1911.

"This is one of my most valuable introductions into South Africa, and I am anxious that it should receive attention in the Southern and Southwestern States as a hay crop.

"Its great value lies in the rapidity of its growth and maturity (2 to 2½ months), and I have heard of a crop having been grown near Bloemfontein with only 4 inches of rain.

"Being sensitive to frost it is only suitable for regions of summer rainfall, which may partly account for the fact that it never 'took' among the farmers of California, where I introduced it many years ago." (Davy.)

31898 and 31899.

From South Africa. Presented by Prof. J. Burt Davy, government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria. Received September 30, 1911.

Seeds of the following:

31898. ACACIA KIRKII Oliver.

Distribution.—The highlands of the Batoka country in Lourenco Marques, on the east coast of Africa.

31899. CAILLIEA NUTANS (Pers.) Skeels.

(*Mimosa nutans* Pers. 1807, Synopsis Plantarum, vol. 2, p. 266.)

(*Cailliea dichrostachys* Guill. and Perr. 1830-1833, Florae Senegambiae Tentamen, vol. 1, p. 240.)

(*Dichrostachys nutans* Benth. 1842, The Journal of Botany, vol. 4, p. 353.)

The seeds of this South African leguminous shrub were received under the name *Dichrostachys nutans*. The generic name *Dichrostachys* was published in 1834 by Wight and Arnott (Prodromus Florae Peninsulae Indiae Orientalis, vol. 1, p. 271) with one species, *D. cinerea*, based on *Mimosa cinerea* L. In 1833, however, Guillemain, Perrottet, and Richard had published the genus *Cailliea* with one species, *C. dichrostachys*, based on *Mimosa nutans* Pers., which is considered to be congeneric with *Mimosa cinerea* L. In establishing the genus *Cailliea* the authors used for the specific name of their plant, *dichrostachys*, which had been used by De Candolle (Prodromus, vol. 2, 1825, p. 445) for a section of the genus *Desmanthus* but which was not published as a generic name until 1834. The earlier generic and specific names are both here restored.

Cailliea nutans is found on the west coast of Africa from Sierra Leone southward to Angola and on the east coast from Abyssinia southward to Mozambique.

"Both of these are shrubs or small trees and the pods are eaten by game and stock, much as is the case with the mesquite of the Southwest. The wood of *Dichrostachys nutans* (*Cailliea nutans*) is very hard and durable and is much valued in termite-infested regions for fence posts, in spite of its usually crooked habit of growth. It is known as *Sikkelbosch* or *Krul-peul*.

"Both bushes are native of the warm, dry middle veld below 4,000 feet and are usually found in sandy or gravelly soils in regions where the rainfall is from 20 to 25 inches, falling in summer." (Davy.)

31900 to 31902. HORDEUM spp.**Barley.**

From Nishigahara, Tokyo, Japan. Presented by Dr. Kozai, director, Agricultural College, Tokyo Imperial University. Received September 28, 1911.

Seeds of the following; quoted notes by Prof. Kozai:

31900. HORDEUM sp.

Saitama-Nishiki.

31901. HORDEUM INTERMEDIUM Koernicke.

Bodzu.

31902. HORDEUM sp.

Nakano-Wase.

"These varieties are cultivated in the western part of our country from olden times and, though their origin is unknown, it may be supposed that they are the result of natural hybridization."

31903 to 31907.

From Puerto Orotava, Teneriffe, Canary Islands. Presented by Dr. George V. Perez. Received September 25, 1911.

Seeds of the following; quoted notes by Dr. Perez:

31903. OCOTEA FOETENS (Soland.) Benth. and Hook.

"A laurel of our flora called *Til*. This is undoubtedly the sacred tree of the island of Hierro which used to condense the mountain mist into water and supply the inhabitants with drinking water. Should be grown in California in localities where mountain mists prevail."

31904 and 31905. CYTISUS spp.

"Two sorts of the famous mountain broom of Teneriffe, renowned for its beautiful flowers, which are an ideal food for bees. It grows between 7,000 and 9,000 feet and would do well in the mountains of southern California."

31904. CYTISUS CANARIENSIS RAMOSISSIMUS (Desf.) Briquet.

31905. CYTISUS SPACHIANUS (Webb) Kuntze.

31906 and 31907. CYTISUS SUPRANUBIUS (L. f.) Kuntze.

"Two very rare Teneriffe cytisi. Should be grown in California or Florida."

31908 to 31913. IPOMOEA BATATAS (L.) Poir.**Sweet potato.**

From Tauranga, New Zealand. Presented by Mr. W. C. Berridge, manager, Experimental Farm, Department of Agriculture, Commerce, and Tourists, Tauranga. Received September 29, 1911.

Tubers of the following; quoted notes by Mr. Berridge:

31908. *Red Waina.*

"This is like the Red Bermuda, or the variety I grew many years ago under that name. The name *Waina* is an attempt by the Maoris to pronounce vine, i. e., a sweet potato grown by sets or pieces of the vine."

31909. *White Waina.*

"Same as the preceding except in color."

31910. *Uti-uti.*

"Pronounced *Hooty-hooty*. This variety is grown from sections of the tuber cut in lengths of 1 to 2 inches. Planted on ridges it does not make much vine."

31908 to 31913—Continued.

31911. Red, from Japan.

"Looks somewhat like Red Jersey. I have not grown it yet, as the tubers were received recently."

31912. *Rekaumauroa* or *Tariana*.

"A dry sweet potato much liked by the Maoris. The meaning of the name is 'sweet forever'."

31913. *Taroamahoe*.

"This small sweet potato is liked by the Maoris, as it is dry and mealy, although small. Tradition says the natives brought it with them about 400 years ago when they first came to New Zealand from Hawaiki (Hawaii)." "

31914 to 31923. DIOSCOREA spp.**Yam.**

From Port Moresby, New Guinea. Presented by Mr. J. A. Hamilton. Received July 31, 1911. Numbered September 30, 1911.

Tubers of each of the following:

31914. *Mordai*.

31920. *Walconco* (?).

31915. *Keressa*.

31921. *Wanse* (?).

31916. *Gorana*.

31922. *Hasalik* (?).

31917. *Sanai*.

31923. This number was given to

31918. *Howtai*.

three tubers, from which

31919. *Sargo*. Reddish, very fair
for table.

the names had evidently
been lost.

31925. (Undetermined.)

From Australia. Presented by Mr. B. Harrison, Burringbar, New South Wales. Received July 31, 1911. Numbered September 28, 1911.

"A native cherry." (*Harrison*.)

31927. ANDROPOGON SORGHUM (L.) Brot.**Sorgo.**

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé. Received May 2, 1911. Numbered September 30, 1911.

"This is a sorgo of the section which contains the Amber, Early Amber, Minnesota Amber, etc. From the appearance of the head I infer that it grew in a field seeded very thickly and that the heads are not at all normal in shape or size. I would suggest that it be grown for determination." (*Carleton R. Ball*.)

31928 to 31931.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received September 18, 1911. Numbered September 28, 1911.

31928. *PERSEA PITTIERI* Mez.

Avocado.

See No. 32173 for later introduction of this species.

31929. *ANNONA PURPUREA* Moc. and Sesse.

Distribution.—Found in southern Mexico, in Panama, and Costa Rica.

31930. *GEONOMA* sp.

Palm.

"A superb palm." (*Wercklé*.)

31931. *COCCOLOBIS* sp. (?)

"Seeds of a carrocaliente, but not the one from the Pacific coast. Is from the mountains. Is esteemed." (*Wercklé*.)

See No. 31636 for other species introduced.

31932. IPOMOEA MAMMOSA (Lour.) Choisy.

From Java. Presented by Mr. M. Buysman, Lawang, Java. Received September 18, 1911.

"This tuber is reported to be a very good medicine in case of diabetes. It is cut in slices or scraped and the mass pressed in a linen sack with water. This water is drunk the entire day. I doubt if it is successful in all cases. The plant can be grown in the Southern States, Florida, and California." (*Buysman.*)

31933. MANIHOT ESCULENTA Crantz.**Cassava.**

From Paraguay. Received through Mr. C. F. Mead, Villa Encarnacion, September 14, 1911.

"Called in Guarany *mandio yeruti*, in Spanish *mantioca*. A sweet variety of cassava, which is dwarf in habit, attaining a height of only 2 meters [6½ ft.] This is of splendid quality for table use, but in no way out of the ordinary, except that the root crop is mature in five months. In Paraguay they plant canes of this variety in August and the root is ready by the end of December. Requires a light sandy loam, not too rich or the plant will run to canes. This variety is for table use, other varieties giving better results for stock crops, where a larger yield is important. From my experience I recommend *mantioca* highly as an excellent vegetable." (*Mead.*)

31934. ACHRAS sp.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose. Received August 14, 1911. Numbered September 28, 1911.

"A *sapotilla*. Large, very high quality; rose-colored flesh; four small seeds in each fruit." (*Wercklé.*)

31935. ZIZIPHUS sp.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August 14, 1911. Numbered September 28, 1911.

31936 to 31938. MANGIFERA INDICA L.**Mango.**

From Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 9, 1911. Numbered September 28, 1911.

Señora.

"These mango seeds were obtained by Mr. P. J. Wester, in Muntinlupa, Rizal Province. This mango is of very limited distribution, only a very few trees having come to our attention. The fruit is very much smaller than either the *Curabao* or *Pico*, and has more fiber and a larger seed in proportion to the flesh than either of these varieties. The quality is very good, but we do not believe that it has any possibilities as a commercial fruit." (*O. W. Barrett, chief, Division of Experiment Stations, Manila, P. I.*)

BOTANICAL NOTES AND PUBLICATION OF NEW NAMES.

31491. *AGROSTIS* sp.
31498. *CALAMAGROSTIS YOUNGHII* (Hook. f.) Skeels.
31501. *SAVASTANA FRASERI* (Hook. f.) Skeels.
31503. *POA AUSTRALIS* R. Br.
31571. *SYZYGIUM CUMINI* (L.) Skeels.
31639. *RHUS VERNICIFLUA* Stokes.
31736. *CAJUPUTI LEUCADENDRA* (Stickman) Rusby.
31850. *MILLETTIA GRANDIS* (E. Meyer) Skeels.
31856. *OXYANTHUS PYRIFORMIS* (Hochst.) Skeels.
31857. *PALLASIA CAPENSIS* Christm.
31860. *STRELITZIA ALBA* (L. f.) Skeels.
31872. *ARISTOCLESIA ESCULENTA* (Arruda) Stuntz.
31899. *CAILLIEA NUTANS* (Pers.) Skeels.

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Issued December 13, 1912.

U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 261.

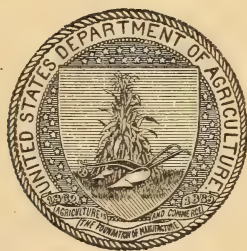
B. T. GALLOWAY, *Chief of Bureau.*

Mr. Harlan

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM OCTOBER 1
TO DECEMBER 31, 1911:

INVENTORY No. 29; Nos. 31939 to 32368.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1912.

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BUREAU OF PLANT INDUSTRY.

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LETTER OF TRANSMITTAL

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., June 12, 1912.

SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 261 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from October 1 to December 31, 1911: Inventory No. 29; Nos. 31939 to 32368."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

B. T. GALLOWAY,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.

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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM OCTOBER 1 TO DECEMBER 31, 1911: INVENTORY NO. 29; NOS. 31939 TO 32368.

INTRODUCTORY STATEMENT.

This number of the inventories contains some of Mr. Frank N. Meyer's collections made in central Asia. They should attract the attention of experimenters whose work lies in the creation of hardier or more drought-resistant fruits, forage crops, or grains for the North and West. The difficulties of travel outside the railroad zone in Siberia and the still greater difficulty of getting the living plants he found there through to America alive give to these collections a special value. They represent only a small fraction of the interesting plants which Mr. Meyer found during his two and one-half years' absence. Some of his most interesting material will be described in later issues of the inventories.

Mr. Meyer is now in America and will spend the season studying the hundreds of plants which he secured both in China and central Asia, many of which are far enough advanced to show their adaptability to the American climate.

Mr. Meyer's new durum wheat, the Teiskaia (No. 32157), which was originated at the Bezenshook Agricultural Experiment Station in Russia, can not fail to attract the attention of the cerealists, in as much as it has proved extremely hardy at Samara, not being injured at all, while other varieties tested at the same time were killed out or at least severely injured.

The problem of studying *Medicago falcata*, the Siberian alfalfa, on the steppes of Siberia was given to Mr. Meyer with the result that he has found at least two distinct wild forms which are worthy of special attention. One is a bunchy upright form (No. 32178) from Ust Kamenogorsk, southwestern Siberia, and the other a very vigorous prostrate form (No. 32179), found on sandy, level stretches of land along the River Tom. This is suited, he thinks, for cultivation in meadows where grass is grown for hay production.

For introduction on the western ranges Mr. Meyer has secured a species of *Astragalus* (No. 32184) which is of bunchy erect habit, is eaten by cattle and horses, and which he believes may have value as a forage plant for cool semiarid climates.

His collection of four hardy Siberian relatives of the sulla (Nos. 32187 to 32189 and 32307), a remarkable forage crop of Spain and Tunis, brings up the question as to whether hardy hybrids which will grow in the South can not now be created. Sulla itself (*Hedysarum coronarium*) has never been made a success in America, owing presumably to its extreme susceptibility to frost. Mr. Swingle recently made the suggestion that the culture of sulla has probably had much to do with keeping up the fertility of the soil in the great sherry-wine region of Spain, which has produced famous wines since Shakespeare's time.

Among the 12 species of vetches (Nos. 32195 to 32206) which were found on the steppes of southwestern Siberia, some are thought by Mr. Meyer to have great promise as forage plants and should be introduced into the northwestern ranges.

Perhaps nothing which he found will create a more general interest than the Siberian cherry from the Ural district and western Siberia (No. 32224). This cherry, identified as a form of *Prunus fruticosa*, is a low bush not over 4 feet high, perfectly hardy and extremely drought resistant, so resistant in fact to extreme cold and drought that it can doubtless be grown throughout the entire Northwest. A plantation of these cherries resembles a tea plantation. The fruits are about the size of currants, are borne in great quantities, and make a most delicious preserve. Not only is this likely to prove a valuable plant as it stands, but two improved varieties have already been produced in Russia and Mr. Meyer has secured these (Nos. 32225 to 32226). The possibility of creating a race of perfectly hardy bush cherries by the use of this species is suggested by Mr. Meyer.

Fruit plants which will live in the interior of Alaska, where the temperature falls to -58° F. and the summers are short and cool, are difficult to find. It seems probable, however, that Nos. 32227 to 32228, two varieties of a large-fruited black currant called the Aldan-sky Vinograd from the Aldan Mountains of the Yakutsk Province of Siberia, will grow and fruit there and help to better the living conditions of such northern regions as Alaska and Labrador.

Of material secured through correspondence the caroá (No. 32260), a remarkable fiber plant from central Brazil, is worthy of special notice. If the information we have is correct, here is a plant related to the bromelias, which occurs on the plateau back of Bahia, is subject to an extremely dry climate, is capable of cultivation, yields a fiber which is much stronger and more resistant to sea water than manila hemp, and will produce a large quantity of the fiber per acre.

Sugar canes for fodder purposes have attracted considerable attention in the South, and the introduction of the Indian cane (No. 32257) from New South Wales, where it has proved very suc-

cessful and is coming into great favor among the farmers, is likely to interest forage-crop men.

The asparagus is already such a highly developed vegetable that it may be questioned whether it can be much improved upon. However, the finding by Mr. Meyer of a form growing on dry mountain sides in the southeastern part of the Caucasus, the shoots of which have a special piquancy (No. 32091), and the introduction through Sir Percy Fitzpatrick of a wild form (No. 32271) from Table Mountain, South Africa, which he declares "is a great delicacy and to my taste better than any of the cultivated kinds," can hardly fail to arouse the interest of progressive asparagus growers.

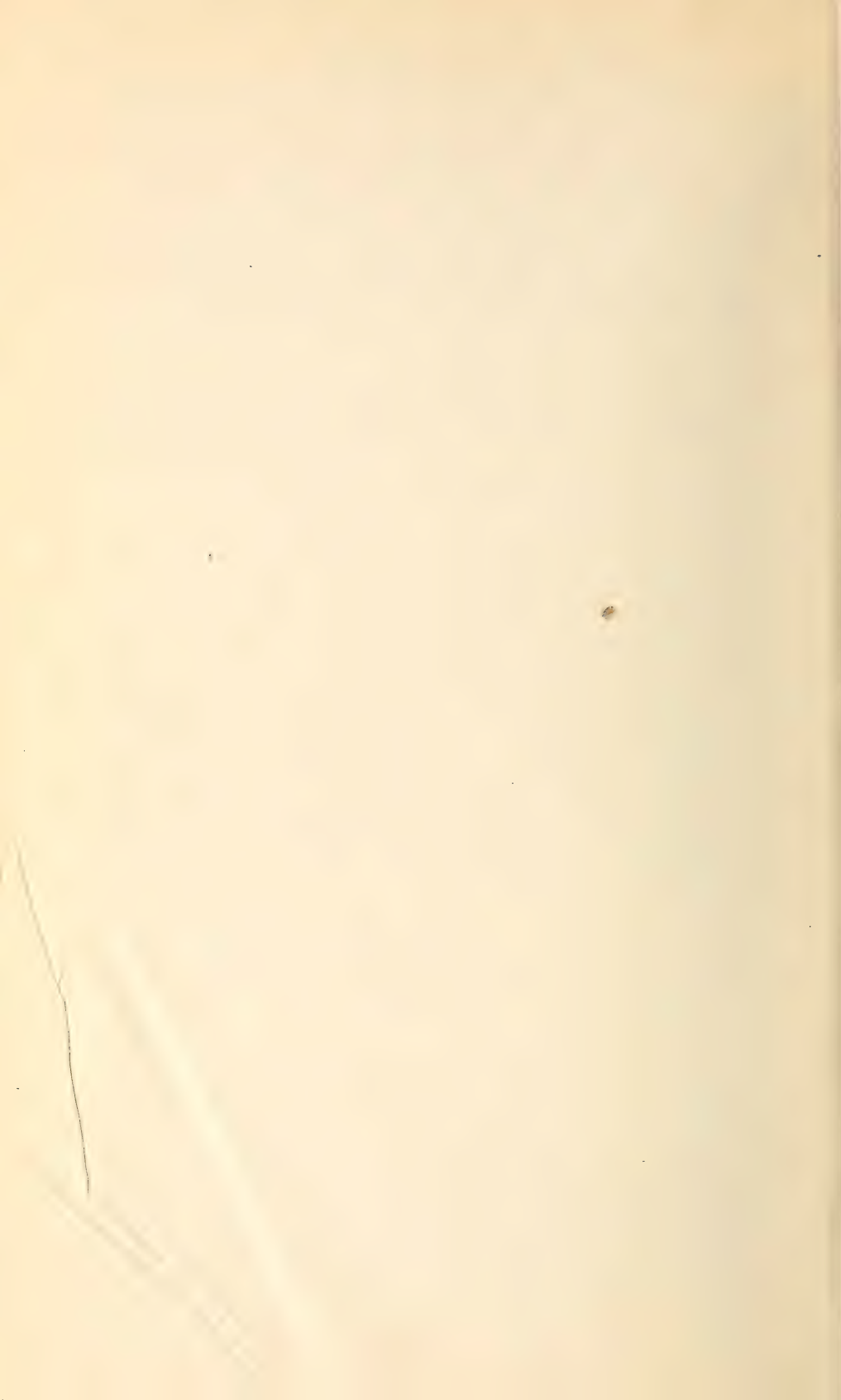
We have scarcely begun to make the acquaintance of the cherimoya, although it is certainly a remarkable subtropical fruit, the cultivation of which in Madeira is a valuable industry. It is claimed that the annona does not bear well at sea level, but one of five varieties just introduced from Costa Rica (Nos. 32298-32301 and 32319) is reported to thrive on the coastal plain of that country.

Dr. Gustav Eisen, of the California Academy of Sciences, during his work in Italy for the Academy, has sent in from near Naples a remarkable plum called the Papagone (No. 32328), which seems not to have been previously introduced. According to Dr. Eisen it is 3 inches long, of a greenish yellow color, has a thin, slender stone, and is the finest plum he has ever eaten in any country.

As heretofore, this inventory has been prepared by Miss Mary A. Austin. For the nomenclature and the notes on the general geographical distribution of the various species Mr. H. C. Skeels is responsible, working, however, under the general direction of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations. The general supervision of this inventory, as of all the publications of this office, has been in the hands of Mr. S. C. Stuntz.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., April 29, 1912.



INVENTORY.

31939. *MEDICAGO SATIVA* L.

Alfalfa.

From Gilghit, Kashmir, India. Received through Mr. F. Booth Tucker, Salvation Army, Simla, India, October 2 and 4, 1911.

31940. *TRITICUM AESTIVUM* L.

Wheat.

From near Cumpas, Sonora, Mexico. Presented by Mr. Alexander V. Dye, American consul, Nogales, Sonora, Mexico. Received October 4, 1911.

"This is known locally as *Sonora* wheat; it is a hard variety and the only one grown in this consular district." (*Dye.*)

31941. *CROTALARIA* sp.

From Puerto Bertoni, Paraguay. Presented by Dr. Moises S. Bertoni, Estacion Agronomica. Received October 5, 1911.

31943 to 31945.

From Quetta, India. Presented by Mr. A. Howard, Imperial Economic Botanist, Agricultural Research Institute. Received October 9, 1911.

Seeds of the following:

31943 and 31944. *MEDICAGO SATIVA* L.

Alfalfa.

31943. *Momgchiri.*

31944. *Qandhari.*

31945. *TRIFOLIUM SUAVEOLENS* Willd.

Shaftal clover.

31946 to 31950. *MANGIFERA INDICA* L.

Mango.

From Monghyr, North India. Purchased from Mr. Lalit Mohan Sinha, Lalloo Pokhar Road. Received October 9, 1911.

Cuttings of the following:

31946. *Malda* No. 1.

31949. *Fazli* No. 1.

31947. *Malda* No. 2.

31950. *Fazli* No. 3.

31948. *Malda* No. 3.

31951 and 31952. *CYTISUS PROLIFERUS* L. f.

Escobon.

From Canary Islands. Presented by Dr. George V. Perez, Puerto Orotava, Teneriffe. Received October 9 and 11, 1911.

Seeds of the following; quoted notes by Dr. Perez:

31951. Variety *canariae*. "This is the escobon of Grand Canary Island. It is an excellent fodder for goats and a sister plant of the tagasaste. I would suggest it being tried in the mountains of extreme southern California."

31952. "A tall shrub that grows here at from 4,000 to 6,000 feet above the level of the sea. Sometimes it is spoken of as variety *angustifolia*. Goats eat it, but the tagasaste (No. 28827) is better, also the variety from Grand Canary Island (No. 31951). However, the Teneriffe escobon, which is, as it were, the type plant, has many uses. Cartwrights use it for wheels in preference to any other timber. Its height is 20 to 25 feet, and the diameter of the trunk 1 foot."

31953. SPATHODEA CAMPANULATA Beauv.

From Java. Received through Dr. B. T. Galloway, Chief of the Bureau of Plant Industry, United States Department of Agriculture, October 10, 1911.

Distribution.—A tree bearing racemes of scarlet or crimson flowers, found in the countries along the western coast of Africa, from Sierra Leone southward to Angola in Portuguese West Africa. Cultivated as a street tree in Java.

31954 to 31956.

Presented by Dr. F. Mader, Nice, Alpes Maritimes, France. Received October 5, 1911.

Seeds of the following; quoted notes by Dr. Mader:

31954. PRUNUS BRIGANTINA Villars.

"Seed collected from a little group growing between the hazel (*Corylus avellana*) in the Miniera Valley, 1,200 meters [3,930 feet] above sea level, and with a climate like that of your Alleghenies. Of course, the species, found here up to 2,000 meters [6,560 feet], is very hardy, as the Barcelonnette Valley, where it especially abounds, has an almost Siberian climate, frequently -25° C. (-13° F.) and lower in the winter, and up to 35° C. (95° F.) in the summer. It is the true Briançon plum of French foresters, being now extensively planted in the high valleys, also on the Italian side, and has proved to be excellent for sheltering river banks, roadsides, stony ravines, or avalanche beds. The wood, which is very scarce, seems very much like that of *Prunus* (*Cerasus*) *mahaleb*. The fruit is free from sweetness and nearly insipid, but would be suitable for marmalades, etc. The seeds yield an oil used by poor mountaineers for cooking purposes, under the name 'huile de marmotte.' The species is not uncommon in the high valleys of the dry western part of the Maritime and Cottian Alps, from the Var to Briançon; in the more rainy eastern valleys it is much rarer, there being only scattered plants or little patches on shady rocks or other places."

31955. MEDICAGO SATIVA L.

Alfalfa.

31956. MEDICAGO FALCATA L.**31957 to 31975. PELARGONIUM spp.**

Geranium.

From Kew, England. Presented by Dr. David Prain, director, Royal Botanic Gardens. Received October 12, 1911.

Cuttings of the following, procured for purposes of breeding with the varieties commonly cultivated, with a view to adding to their bedding qualities:

31957. PELARGONIUM CAPITATUM (L.) L'Herit.

Distribution.—A trailing, partly shrubby plant with rosy-purple flowers in dense heads, found in the vicinity of Table Mountain and on the flats around Cape Town, South Africa.

31958. PELARGONIUM QUERCIFOLIUM (L. f.) L'Herit.

Distribution.—A hairy, much-branched shrub, found in South Africa, and well known in cultivation as the "oak-leaf geranium."

31959. PELARGONIUM VIOLAREUM Jacq.

Distribution.—A diffuse shrub with the two upper petals dark red and the three lower ones white, growing on the slopes of the mountains in South Africa.

31960. PELARGONIUM RAPACEUM (L.) Jacq.

Distribution.—On dry stony mountain sides in the vicinity of Cape Town and in the Stellenbosch and Swellendam districts of South Africa.

31957 to 31975—Continued.

31961. *×* *PELARGONIUM TRICUSPIDATUM* L'Herit.

Apparently a hybrid of obscure origin.

31962. *PELARGONIUM CORDIFOLIUM* (Cav.) Curtis.*Distribution*.—A shrub found on the slopes of the mountains from the valley of the Olifant's Vlei River southward to the Cape, in South Africa.31963. *×* *PELARGONIUM BLANDFORDIANUM* (Andr.) Sweet.

Apparently a garden hybrid of unknown origin.

31964. *PELARGONIUM QUERCIFOLIUM* (L. f.) L'Herit.Variety *major*.31965. *PELARGONIUM RADULA* (Cav.) L'Herit.Variety *major*.*Distribution*.—A large, densely branched bush found on the mountain sides in the Tulbagh, Uitenhage, and Albany districts of South Africa.31966. *PELARGONIUM RADULA* (Cav.) L'Herit.31967. *PELARGONIUM UNICOLORUM* Willd. (?)These were received under the name *Pelargonium unigue aurora*, which may be a varietal name, but the possibility of error between that name and *unicolorum* is very suggestive. *P. unicolorum* is apparently a hybrid of garden origin.31968. *PELARGONIUM MALVAEFOLIUM* Jacq. f.*Distribution*.—Described from cultivated plants and is probably a garden hybrid.31969. *PELARGONIUM CRISPUM* (Bergius) L'Herit.*Distribution*.—A slender shrub with strongly scented leaves found on shrubby mountain slopes in South Africa.31970. *PELARGONIUM DENTICULATUM* Jacq.Variety *major*.*Distribution*.—A tall weak-stemmed plant found on the mountain slopes in the southern part of South Africa.31971. *PELARGONIUM VISCOSISSIMUM* Sweet.*Distribution*.—Described from garden plants grown from seed received from the Cape.31972. *PELARGONIUM ZONALE* (L.) L'Herit.*Distribution*.—A large shrub found on hillsides in the western districts of South Africa.31973. *PELARGONIUM BALBISIANUM* Spin.*Distribution*.—Probably a garden hybrid.31974. *PELARGONIUM CORDIFOLIUM* (Cav.) Curtis.31975. *PELARGONIUM GRANDIFLORUM* Willd.*Distribution*.—A shrubby plant with leaves palmately lobed and coarsely toothed, bearing large white flowers, found in the vicinity of Giftberg, in South Africa.31976. *COFFEA LIBERICA* Bull.

Coffee.

From Liberia, West Africa. Presented by Mr. Henry O. Stewart, Monrovia, Liberia. Received October 14, 1911.

Distribution.—Liberia and Sierra Leone in Upper Guinea and in the Angola district of Portuguese West Africa in Lower Guinea, on the west coast of tropical Africa.

31977. PHORMIUM TENAX Forst.**New Zealand flax.**

From California. Presented by Mr. P. D. Barnhart, Los Angeles. Received October 9, 1911.

Variegated variety.

Seeds.

31978. ANNONA MURICATA L.**Soursop.**

From Cuba. Presented by Mr. Robert L. Luáces, agricultural engineer, Camaguey, Cuba. Received October 9, 1911.

"Seed of a wild variety little known even here in Cuba. It is a beautiful tree, growing as much as 30 feet high on the banks of streams and ponds. The fruit is more rounded in shape than the cultivated, and although acid in taste can be eaten. This I believe will make a good stock for *Annona squamosa*." (Luáces.)

31979. MEDICAGO SATIVA VARIA (Mart.) Urban.**Sand lucern.**

From Schoeningen, near Colbitzow, Pomerania, Prussia, Germany. Grown on the farm of Mr. Ernest Schlange. Presented by Mr. Joseph E. Wing, Mechanicsburg, Ohio. Received October, 1911.

"This wild yellow alfalfa was found growing on waste sandy ground near a field of cultivated lucern." (Wing.)

31980. PETASITES LAEVIGATUS (Willd.) Reichenb.

From near Sminogorsk, southwestern Siberia. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, October 11, 1911.

"(No. 988.) An interesting hardy aquatic perennial, growing on the banks of swift-flowing, shallow streamlets, extending often for several yards in the water, but not occurring in places over 2 feet in depth. Of value as a decorative plant along watercourses in parks in the cooler sections of the United States." (Meyer.)

Rhizomes.

Distribution.—In Bohemia and the southwestern part of Siberia.

31981. CITRUS sp.**Sour citron.**

From Nagpur, Central Provinces, India. Procured by Mr. R. S. Woglum, Bureau of Entomology, United States Department of Agriculture. Received October 14, 1911.

"*Zamburi*, sour citron. The chief stock used for budding in the Central Provinces, India. The fruit is sour like a lemon, and has a yellow-covered rind. In appearance, color, taste, and character of flesh it is very similar to a California Eureka lemon allowed to overmature on the tree." (Woglum.)

Seeds.

31982. BRYOPHYLLUM PINNATUM (L. f.) Kurz.

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion, Paraguay. Received October 14, 1911.

"This is called locally *La Milagra* (the miracle). A curiosity even for these parts. A low-growing shrub with waxlike leaves of which snails, etc., are very fond. Leaves dropping off from the plant reproduce themselves around the outer edges, or if you pin a leaf on a wall or other place it will start growing." (Mead.)

Distribution.—Probably a native of tropical Africa and generally cultivated throughout the Tropics.

31983. CASTILLA sp.**Central American rubber.**

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose. Received October 20, 1911.

Seeds.

31984. PERSEA AMERICANA Miller.**Avocado.**

Presented by Mr. C. F. Mead, Villa Encarnacion, Paraguay. Received October 23, 1911.

"*Abogado*, otherwise called *abagate*, *pagua pauta*, *abaji*, *aguacate*, *ahuaca*, or alligator pear. Seeds from fruit found in the market at Buenos Aires. Fruit small, pear shaped, and dark red in color. Sold in market under the name of 'red Chilean abacate,' or 'red abacate from Chile.'" (*Mead.*)

31985 to 31998. IPOMOEA BATATAS (L.) Poir.**Sweet potato.**

From Peru. Presented by Mr. Antonio Graña, Huando, Chancay, Peru. Received October 10, 1911.

Tubers of the following; quoted notes by Mr. Graña:

"These sweet potatoes bear different names by which they are known by the people of the country without indicating thereby any scientific classification. Neither are they grown as distinct varieties, as they are produced mixed together."

31985. "*Vapor*. Produces in four months."

31986. "*Huamino*. Produces in five months."

31987. "*Cochino*. Produces in six months."

31988. "*Azadura de vaca*. Produces in five months."

31989. "*Romero*. Produces in five months."

31990. "*Supano blanco* (white). Produces in five months."

31991. "*Supano prieto* (black). Produces in five months."

31992. "*Papa*. Produces in four months."

31993. "*Limeño*. Produces in five months."

31994. "*Plaza*. Produces in four months."

31995. "*Niño*. Produces in five months."

31996. "*Cambrax*. Produces in five months."

31997. "*Tabardio*. Produces in five months."

31998. "*Yemade huevo*. Produces in five months."

31999 to 32001. CROTALARIA spp.

From Buitenzorg, Java. Sent in by the Java Department of Agriculture, at the request of Mr. C. V. Piper, Bureau of Plant Industry. Received October 5, 1911.

Seeds of the following; under trial at the Buitenzorg garden as green-manure crops and will be tested here for the same purpose.

31999. CROTALARIA ALATA Hamilton.

Distribution.—From the mountains in the Province of Assam in northeastern India southeastward to Java.

32000. CROTALARIA LEIOLOBA Bartl.

Distribution.—On the lower mountain slopes in northern India from Nepal to Assam, and eastward through the Malay Archipelago as far north as the Philippines.

32001. CROTALARIA SALTIANA Andrews.

32002 and 32003.

From Guatemala. Presented by Mr. S. Billow, Guatemala, Central America.
Received October 12, 1911.

Seeds of the following; quoted notes by Mr. Billow:

32002. CEREUS sp.**Pitaya.**

"This fruit is produced about 30 miles from Guatemala City, and I understand that it is closely allied to the cactus family. It is red colored and is very delicious. The blossom of the plant, as well as the fruit, is eaten."

32003. PASSIFLORA LIGULARIS Juss.**Passion fruit.**

"This is about the size of a large egg and the seeds are surrounded with a gelatinous substance. When ripe the seeds and this jellylike substance are eaten; when green the whole fruit is stewed in sugared water and eaten, and the seeds and jelly substance are thrown away. It grows on a vine and is largely consumed."

32004. PHYTOLACCA ACINOSA Roxb.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received October 17, 1911.

Variety *kaempferi*.

Seeds.

See No. 29133 for distribution of this species.

32005. SOLANUM HAEMATOCCLADUM Dunal.

From Brussels, Belgium. Obtained by Prof. William R. Lazenby, of the Ohio State University, Columbus, Ohio. Received October 18, 1911.

"This is a vigorous growing, red-fruited species." (*Lazenby*.)

Distribution.—Not known except from Bolivia.

32006. DIMOCARPUS LONGAN Loureiro.**Longan.**

The seeds of this Chinese sapindaceous tree were received under the name *Euphoria longana*, which was published by Lamarck (*Encyclopédie Méthodique Botanique*, vol. 3, p. 574) in 1791. The generic name *Euphoria* was used by Jussieu (*Genera Plantarum*, p. 247) in 1789, who characterized the genus and mentioned the plants known by the Chinese names litchi and longan as belonging to it. If the litchi is regarded as the type of the genus *Euphoria*, the name *Euphoria* becomes a synonym of *Litchi*, the generic name of the litchi tree. If the longan be regarded as the type species of *Euphoria* the name *Euphoria* can not be maintained because the longan had not at this time received a binomial name, and as Jussieu does not describe it nor give it a binomial name he can not be said, according to present rules of botanical nomenclature, to have published the generic name *Euphoria*. The first generic name published for the longan is *Dimocarpus*, published in 1790 by Loureiro (*Flora Cochinchinensis*, vol. 1, p. 233) and Loureiro's name for this species is here used.

From Kiayingchow, China. Presented by Mr. George Campbell. Received October 19, 1911.

"Seeds from some particularly large and fine fruit." (*Campbell*.)

The tree is handsome and may be used as a shade tree, also as a stock on which to bud the litchi.

Distribution.—Found in India, where it is probably native, and eastward to China and through the Malay Archipelago.

32008. OCIMUM VIRIDIFLORUM Roth. Mosquito plant.

From Southern Nigeria, West Africa. Presented by Mr. W. H. Johnson, director, Agricultural Department, Ibadan, Southern Nigeria. Received October 20, 1911.

"This is the West African mosquito plant. This plant is known locally to possess valuable qualities as an insectifuge, but I think its use is really not much practiced by the natives. The foliage is usually hung up in dwelling houses in the green state to keep away mosquitoes. The dried plant is also burned and the resulting smoke therefrom is considered to be useful for the same purpose." (*J. W. Henderson, acting director.*)

Distribution.—A herbaceous perennial found along the western coast of Africa from Sierra Leone southward to Angola.

32009 to 32011. HIBISCUS spp.

From Gold Coast, West Africa. Presented by Mr. A. R. Gould, curator, Botanic Garden, Aburi. Received October 20, 1911.

Seeds of the following; quoted notes by Mr. Gould:

32009. HIBISCUS CANNABINUS L. Ambari.

"White, large leafed."

Distribution.—Naturalized or cultivated throughout the Tropics; probably wild in India.

32010 and 32011. HIBISCUS SABDARIFFA L. Roselle.

32010. "Red-stalked variety."

32011. "White-stalked variety."

"Interesting indigenous fiber plants cultivated by the natives in the interior."

32012 to 32013. CHRYSANTHEMUM CINERARIAEFOLIUM (Trev.) Vis. Pyrethrum.

From Dalmatia, Austria-Hungary. Presented by Mr. K. Portele, Imperial Ministry of Agriculture, Vienna, Austria-Hungary. Received October 20, 1911.

Seeds of the following:

32012. From Cattaro.

32013. From Ragusa.

"This species grows wild here in Dalmatia and is also cultivated."

32014. CRATAEGUS COCCINEA L. Hawthorn.

From Seattle, Wash. Collected by Messrs. P. H. Dorsett and Peter Bisset, of the Bureau of Plant Industry. Received October 25, 1911.

"A large-fruited Crataegus collected in Woodland Park, Seattle." (*Bisset.*)

32015 and 32016. PHOENIX DACTYLIFERA L. Date.

Grown at the Cooperative Date Garden, Tempe, Ariz., Mr. F. H. Simmons in charge. Received in the spring of 1911. Numbered October 25, 1911.

Seeds of the following:

32015. *Rhars.*

32016. *Deglet Noor.*

32017. PRUNUS sp. Plum.

From Pietermaritzburg, Natal, South Africa. Presented by Mr. T. R. Sim. Received October 28 and November 3, 1911.

Methley. See No. 31652 for description.

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32018. ANNONA SQUAMOSA L.**Sweetsop.**

From Cuba. Presented by Mr. Roberto L. Luáces, Camaguey, Cuba. Received October 24, 1911.

Seeds.

32019. BOSWELLIA sp.**Frankincense.**

From the island of Socotra. Procured by Mr. Charles K. Moser, American consul, Aden, Arabia. Received November 17, 1911.

Mr. Moser made a special expedition from Aden to the island of Socotra at the mouth of the Red Sea at the request of the Office of Foreign Seed and Plant Introduction, and secured two trees of this so-called incense tree. He was enabled to do this through the assistance of the British Resident at Aden, who invited Mr. Moser to accompany him as a guest on a British Government vessel upon which he himself made a special trip to the island of Socotra for the British Government. Two trees were obtained by Mr. Moser during a 26-hour wait of the vessel, being dug out of the soil by native Socotran boys, at an elevation of about 2,500 feet above the sea. These were packed in kerosene cases filled with Socotran soil and were taken by caravan to the boat and transported to Aden. They remained in these tins until October 7, 1911, when they were sent to the Department. The following report is taken from Mr. Moser's letter of April 29, 1911:

"We went into the mountains directly south of Tamarida Bay to a place called Adho Dimellus in the Haghier Range. We first saw the tree about 9 miles in a direct line from the sea at an altitude of about 2,800 feet. The trees were apparently in full flower, with immature fruits intermingled. There were no signs of old seeds, and the Socotrans pretended never to have seen any seeds, but they could be easily gathered, and I have made arrangements to procure some during the summer. The soil was very rocky, a red, rich-looking, easily disintegrated granite, out of which, higher up, arose limestone escarpments. The temperature during the night was about 65° F., but at noon it was nearly 90° F. All the trees we saw were nearly the same size, and I was astonished to find in an area of several miles no small shoots or saplings.

"The natives call the frankincense tree *tee-lah-ah* (spelled phonetically) and its product *lu-ban*. From the samples which I saw and from the reputation it bears in the Aden market, it seems certain that the quality of Socotran *lu-ban* is distinctly inferior to that of Somali and the Hadramaut, and the produce per tree is much smaller. The trees we saw were from 20 to 30 feet in height and from 8 to 10 inches in diameter, with scraggly, swollen branches, which scarcely tapered and ended in tufts of sumac-like leaves of a general yellowish color clotted with autumnal reds. The leaves were multifoliate, 7 to 11 leaflets, 1½ to 2½ inches long, elliptic, regularly crenated, and medium ovate. The flowers are very thickly clustered on thick stalks, 5 to 8 inches long, with nearly a uniform diameter of five-eighths to three-fourths of an inch; in color the flowers were a deep pink or bright magenta, much resembling a thick cluster of double geraniums. The immature fruits among them were one-half to five-eighths of an inch long and pear shaped. The bole and branches were of a livid greenish, almost translucent hue, smooth and covered with blotches, resembling gangrenous human flesh; the outer bark sheds in thin, yellowish white, papery strips or peels. When cut, even with the thumb-nail, the bole, the boughs, and the stalks yield a clear, sticky, viscous fluid with a rich aromatic odor. This exudation usually remains clear until and after it hardens, but I saw some trees with clear 'tears' and on others brownish or amber-colored ones. Every day I have cut my two specimens with the thumb-nail, and with but two exceptions the exudation has been clear and colorless; on those two occasions the wound was followed by a milky drop, but I have been unable to discover why.

"The Socotra olibanum flowers in April and the gum is collected any time after May, which is the beginning of the wet season. It is usually collected, however, during June, July, and August. The Socotran merely goes among the wild trees, giving each about a dozen deep, oblique slashes, 2 or 3 inches long, which he tears open into a kind of pocket at the lower end with a wrench of his knife. The tree is then left to deposit its sap in these pockets for three weeks or a month, at the end of which time the collector comes with his knife and basket and cuts the collected nodules 'or tears' away with pieces of bark. He then either makes new cuts or deepens the old ones and again awaits the harvest in another three or four weeks. The process is repeated until September. The *lu-ban*, which overflows the wound and runs down the tree, is regarded as of less value than that which remains in the pockets. A Socotran average tree is said to yield from 1 to 5 pounds of *lu-ban* per season, while the yield in Somali is much larger. Its value in the island is simply anything which the collector, who has little use for money, can persuade the Arab trader to give him for it in rice, goats, or cotton shirting. In Aden it is worth from 6 to 12 cents per pound, according to quality, while the Somali *lu-ban* is worth from 10 to 24 cents per pound.

"I must add that we found the olibanum growing only on the inside, protected slopes of the mountain, that its range seemed to be from 2,000 to 4,000 feet, and that while we only saw it in a red granite soil, we were told that it grew equally well out of fissures in the limestone heights above us. The climate of Socotra is, of course, very dry and not so hot as Arabia. We found the earth exceedingly dry, and were informed that rain never falls in the Haghier Hills except during the rainy months from May to August or September.

"There is no cleaning of the collected *lu-ban*, but as soon as it hardens a little after being cut from the trees it is ready for market." (*Moser.*)

"The frankincense tree is supposed to have been the tree which furnished the frankincense of the ancients, and the hardened drops of gum are now used very extensively in Roman Catholic churches as incense, being burned in the censers. The tree will probably thrive only in the dry, almost frostless, areas of the Southwest." (*Fairchild.*)

32020. CITRUS LIMETTA Risso.

Lime.

From Burringbar, New South Wales, Australia. Presented by Mr. E. Harrison, Burringbar. Received July 31, 1911. Numbered October 15, 1911.

Seeds.

32021. STIZOLOBIUM CINEREUM Piper and Tracy.

From Amani, German East Africa. Presented by Dr. A. Zimmermann, director, Biologisch Landwirtschaftliches Institut, Amani. Received October 25, 1911.

32022 to 32025. STATICE spp.

From Canary Islands. Presented by Dr. George V. Perez, Puerto Orotava, Teneriffe. Received October 5, 1911.

Seeds of the following; quoted notes by Dr. Perez:

32022. STATICE ARBOREA Brouss.

Variety *frutescens*. "Native of Teneriffe. Botanically this is a dwarf form of *arborea*."

32023. STATICE MACROPTERA Webb and Berth.

"Native of the island of Hierro."

32024. STATICE PEREZII Stapf.

"Native of Teneriffe. Newly discovered species."

32025. STATICE PUBERULA Webb.

"Gathered wild at Famara, Lanzarote. This seed keeps 2 or 3 years."

32026 and 32027.

From near Ust Kamenogorsk, southwestern Siberia. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, October 30, 1911.

Roots of the following:

32026. HEDYSARUM SPLENDENS Fisch.

"(No. 989, October 2, 1911.) A rare and interesting legume occurring on stony mountain slopes here and there along the Irtysh River. May possess value as a forage plant in semiarid regions where irrigation is not practicable and where the soil is stony and sterile." (*Meyer.*)

32027. ASTRAGALUS sp.

"(No. 990, October 2, 1911.) A small Astragalus, quite common on rocky and sterile places. Is eagerly browsed by horses and cattle. Of value like the preceding number." (*Meyer.*)

32028 to 32032.

Presented by Dr. A. Robertson Proschowsky, Nice, France. Received October 30, 1911.

Seeds of the following; quoted notes by Dr. Proschowsky:

32028. OXYTENANTHERA ABYSSINICA (Rich.) Munro.

From Abyssinia.

"The following plants from Nice, France, are exceedingly drought resistant and are liked by herbivorous animals."

32029. CORONILLA VALENTINA L.

Distribution.—The countries bordering on the western part of the Mediterranean from Spain to Italy, Corsica and Sardinia, and in northern Africa.

32030. LOTUS ORNITHOPODIODES L.

See No. 7730 for description.

Distribution.—The countries bordering on the Mediterranean from Spain to Syria and in northern Africa.

32031. MEDICAGO SATIVA L.

Alfalfa.

"Seeds of the wild-growing form."

32032. MEDICAGO ORBICULARIS MARGINATA (Willd.) Benth.**32033 and 32034. ANNONA CHERIMOLA Miller. Cherimoya.**

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose. Received October 27, 1911.

Seeds of the following; quoted notes by Mr. Wercklé:

32033. "From Don Buenaventura Corrales."**32034. "First-class Annona from Vindas, in San Pedro del Mojon."****32035. PHASEOLUS sp.**

From South Sea Islands (Oceania). Presented by Rev. C. N. Field, 33 Bowdoin Street, Boston, Mass. Received November 3, 1911.

"I have never tasted a variety as delicious as this one. The seeds were given to me by a man who had traveled around the world. They thrived much better than ordinary scarlet-runner beans; on very poor soil near Boston they grew 10 feet high and were remarkably productive. They are eaten baked after removing the pods and found especially sweet. They have a very pretty purple flower." (*Field.*)

32036 and 32037. LANGUAS GALANGA (L.) Stuntz. Galangale.

Roots of this plant were received under the name *Alpinia galanga* (L.) Willd. The genus *Alpinia*, however, was based on a single species, *Alpinia racemosa* L. (Species Plantarum, vol. 1, 1753, p. 2). This is not now considered congeneric with the present plant, which was first published as *Maranta galanga* L. (Species Plantarum, ed. 2, vol. 1, 1762, p. 3). As the type of the genus *Maranta* is *Maranta arundinacea*, also not congeneric with the galangale under discussion, it is necessary to adopt for this plant the next later generic name, *Languas*, published in 1783 by Koenig in Retzius, *Observationes*, vol. 3, p. 64.

From Buitenzorg, Java. Presented by the Director of Agriculture at the request of Mr. C. V. Piper. Received November 2, 1911.

Distribution.—Throughout India from the foot of the Himalayas to Ceylon and Malakka; generally cultivated in the Tropics.

Roots.

32038 to 32042.

From Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, November 3, 1911.

Seeds of the following:

32038. TRITICUM AESTIVUM L.**Wheat.**

From Kizil Bulak, Tien Shan Mountains, Chinese Turkestan. Altitude, 6,650 feet.

“(No. 1583a, March 4, 1911.) A summer wheat of a very dark color, called *Kara boogdai*, meaning black wheat. Sown in early April and grown under irrigation. Of value probably for sections of the United States where the summers are not only short but hot and dry.” (Meyer.)

32039. TRITICUM AESTIVUM L.**Wheat.**

From Kara Tugai, Tekes Valley, Tien Shan Mountains, Chinese Turkestan. Altitude, 3,900 feet.

“(No. 1584a, March 6, 1911.) A rare local variety of summer wheat of great excellence. Grains large, of a pale-yellow color, ears very long. The flour made from this wheat makes a fine quality of substantial bread. Sown in April and raised under slight irrigation. To be tested in the western sections of the United States.” (Meyer.)

32040. ORYZA SATIVA L.**Rice.**

From Aksu, Chinese Turkestan.

“(No. 1585a, February 27, 1911.) A local variety of wet-land rice, called *Kara kiltrick*. The variety absorbs a large quantity of water in cooking; the grains always remain separate, are of a snow-white color, and a very large size. Although expensive in comparison to the lower grades, yet it is considered economical, as only one-third to one-half the quantity is needed to fill the same cooking vessel. If a specially fine quality of rice is wanted, the plants are set out by hand, with the result that the rice treated in this manner is larger, of finer quality, and greater in yield. However, as the labor connected with such practice is too expensive to justify the returns, this variety is usually sown broadcast, like all rices in this part of the world.

“As the soil around Aksu is decidedly alkaline, this rice will be able to stand a fair amount of alkali. Otherwise it can be tested in the same way as Nos. 1571a to 1580a, inclusive (S. P. I. Nos. 31823 to 31832).” (Meyer.)

32038 to 32042—Continued.

32041. *ORYZA SATIVA* L.

Rice.

From Aksu, Chinese Turkestan.

"(No. 1586a, February 27, 1911.) A local variety of wet-land rice, called *At kiltrick*. In looks and yield very much the same as the preceding number, but not near so good in quality; swells but little in cooking and is not so white and large. To be tested like the preceding number." (*Meyer*.)

32042. *HORDEUM* sp.

Barley.

From Yengi Malah, Tien Shan Mountains, Chinese Turkestan. Altitude, 7,950 feet.

"(No. 1587a, March 4, 1911.) A black hull-less summer barley, grown under irrigation on rocky fields at high altitudes. A very rare local variety, apparently a mutation which has not yet been fixed. It is intermixed with other varieties and with wild black and white oats, which may also prove to be interesting. Locally used as a feed for horses and may possibly be of value for growing for this purpose in elevated arid and semiarid regions. To be tested especially in the intermountain sections of the United States." (*Meyer*.)

NOTE.—See Nos. 32280 and 32281 for oats and barley picked out of this lot.

32043 to 32060.

From Brazil. Presented by Mr. Welman Bradford, Crowley, La. Received October 2, 1911.

Seeds of the following; quoted notes by Mr. Bradford:

32043. *MICHELIA CHAMPACA* L.

Champac.

"Magnolialike tree having yellow blooms. Not as sweet as our magnolia. Grows 30 feet high. It is being planted in Sao Paulo as an ornamental street tree."

Distribution.—A tall tree found wild in the forests on the temperate slopes of the Himalayas in northern India; often cultivated.

32044 to 32046. *ANNONA SQUAMOSA* L.

Sweetsop.

"*Fruta de conde*. This is known as the *Princess fruit*; there is another variety called the *Prince*. In my estimation it is the best fruit that ever grew. The largest plants I have noticed are about 12 feet high, and the largest fruit about 5 inches in diameter."

32047. *PASSIFLORA* sp.

Passion fruit.

"*Maracuja roxo* (purple maypop). This is round, very hard, and stiff. Should not be eaten until quite ripe, as it is too sour."

32048 and 32049. *PASSIFLORA* sp.

Passion fruit.

"Said to be the best to eat."

32048. "*Maracuja amarello* (yellow maypop). Large."

32049. "*Maracuja amarello* (yellow maypop). Small."

32050. *PASSIFLORA LIGULARIS* Juss.

Passion fruit.

"*Maracuja guasu* (large maypop)."

32051. *ERYTHRINA CRISTA-GALLI* L.

See No. 29655 for description.

32052. *ROLLINIA* sp.32053. *TOLUIFERA* sp.

"A tall forest tree. Wood deep purple, oily, very sweet scented, proof against the attack of ants, absolutely everlasting. Posts made from it never rot, and trunks and furniture are insect proof."

32043 to 32060—Continued.**32054.** *DOLICHOLUS PHASEOLOIDES* (Swartz) Kuntze.

"A little vine that grows wild and bears a very pretty bean. All the people of the East Indies use these beans for ornament, stringing, etc."

Distribution.—In the West Indies and from Nicaragua southward through tropical South America.

32055. *ORMOSIA MONOSPERMA* (Swartz) Urban.

"A hardwood timber forest tree growing on the banks of rivers."

32056. *GOSSYPIMUM* sp.**Cotton.****32057.** *ORYZA SATIVA* L.**Rice.**

"Black rice. Planted here in fields to fool the birds."

32058. *CANAVALI* sp. (?)

"This is known throughout the Parahyba Valley, also between Sao Paulo and Rio Janeiro. It is an easy and luxuriant grower found in the woodlands and in the timber, thrives in the dense shade, the vines climbing up to the tops of the trees at least 20 feet until they find the sun. Not cultivated at all. Some people seem to think it is poisonous and say that the cattle after eating the beans and pods and drinking water will die. It is a prolific bearer; the pods are about 8 inches long, and as well as I can remember are smooth. It has three leaflets somewhat separated from each other, not close, as with the cowpea."

32059. *ASTRAGALUS SINICUS* L.

"From Parahyba Valley. A giant clover growing 3 or 4 feet high. Flowers pink to yellow. Bears a slightly curved, fuzzy pod 1½ inches long. The roots are well covered with nodules. It is a weed at present, but by planting closely it will get finer and softer. May be of value for plowing under."

32060. *VIGNA SINENSIS* (Torner) Savi.**Cowpea.**

"From a bean exposition in Sao Paulo."

32061 and 32062. ANDROPOGON SORGHUM (L.) Brot. Sorghum.

From Buitenzorg, Java. Presented by the Department of Agriculture, at the request of Mr. C. V. Piper, Bureau of Plant Industry. Received October 5, 1911.

Seeds of the following; quoted notes by Mr. Carleton R. Ball:

32061. "Seeds brown (clay on the included portion and burnt sienna to claret brown on the exposed tips), narrowly obovate, cuneate at the base; 3 by 5 millimeters in diameter. Glumes transversely shouldered, black, and indurated below the shoulder, somewhat scarious above; more or less pubescent."

32062. "A form of white durra. Seeds white, sublenticular; 3½ by 4 millimeters to 4 by 4½ millimeters in diameter. No glumes present."

32063. (Undetermined.)

From Brazil. Presented by Mr. Fred. Birch, Theophilo Ottoni, Minas Geraes, Brazil. Received November 4, 1911.

"Seeds of a forest shrub which I have discovered here. It is a rare pleasure to find a new fruit thus. It is a shrub about 4 feet high, of very compact growth; stem and branches tough and elastic, leaves dark green, glossy, and fairly tough, about 1½ to 2 inches long by 1 inch wide, built like so many of the leaves here for living through a long dry season. I have not yet seen the flower. The fruit is a sort of elongated

cherry, about seven-eighths of an inch long by three-eighths to seven-sixteenths of an inch thick in the middle, black or purple black, and with a bright glossy skin. They usually occur singly, strung along the branches, but sometimes there are two together. From one small shrub we have eaten, I think, about 300 fruits. The flesh is about one-eighth of an inch thick over the seed and it is soft and juicy, tasting more like a black cherry than any other northern fruit I can think of. When I recall the size of the wild fruit from which the common cherry is supposed to have originated, I think this little fruit promises well to repay cultivation. I would suggest trying it in Florida or California or Texas; the last-named State may be the best for it. From mid-August until the end of September is the time of fruiting—i. e., in early spring here." (*Birch.*)

32064 to 32069.

From Mexico. Presented by Dr. C. A. Purpus, Zacuapam, Huatusco, Vera Cruz, Mexico. Received November 6, 1911.

Seeds of the following; quoted notes by Dr. Purpus:

32064 to 32067. SOLANUM NIGRUM L.

Nightshade.

32064. "From Minas San Rafael, San Luis Potosi, 1,600 meters [5,250 feet]."

32065. "From Esperanza, Puebla, 2,700 meters [9,850 feet]."

32066. "From Tehuacan, Puebla, 1,700 meters [5,575 feet]."

32067. "From Rascon, San Luis Potosi, 400 to 500 meters [1,300 to 1,650 feet]."

32068 and 32069. NICOTIANA spp.

Wild tobacco.

32068. "From Guascama, San Luis Potosi."

32069. "From Minas San Rafael, San Luis Potosi."

32070. CACARA EROSA (L.) Kuntze.

From Tampico, Mexico. Presented by Mr. Clarence A. Miller, American consul, through Mr. E. C. Green, in charge, South Texas Garden, Brownsville, Tex. Received December 18, 1911.

"*Hicama de Agua.*" See No. 27959 for previous introduction.

32071. CALLITRIS CUPRESSIFORMIS Ventenat.

Tasmanian cypress pine or Oyster Bay pine.

From Tasmania. Presented to the United States Forest Service by Mr. L. A. Evans, editor of the Agricultural Gazette, Hobart, Tasmania, and to the Office of Foreign Seed and Plant Introduction by Mr. Raphael Zon, Chief of Silvics, United States Forest Service. Received November 8, 1911.

"This pine is described by Col. W. V. Legge in a report on the 'Tasmanian cypress pine,' published this year [1911]. According to this paper, the tree is confined mainly to the coast, where it does well on poor soils. It seems to have a slow growth, but in time reaches a height of 100 feet and a diameter of about 2½ feet. In spite of the fact that it is chiefly a warm climate tree, it also thrives in some of the colder parts of Tasmania, where there is considerable frost. It has a plain whitish wood, without figure, and with little difference in color between the sapwood and the heartwood. Its grain is hard and close, and the wood is exceedingly durable. It is largely used for piles, telegraph poles, and in general construction work. It not infrequently grows in mixture with eucalypts and when grown in the forest under moderate light conditions its form is that of a sharp cone, which is tall both in proportion to the diameter and the spread of the lateral branches. There are all gradations from this form to the spreading bushy tree found in the open.

"Since Florida is apparently the region in the United States best adapted to this species, I would advise growing some at Miami for experimental planting by the Forest Service in the Florida National Forest. Although the tree is widely used for a great variety of purposes in Tasmania, I doubt if it would prove superior to our own conifers and believe that the chief advantage in introducing it into Florida would probably be to furnish a comparatively soft, light wood for local use." (*Zon.*)

32072. SYZYGIIUM CUMINI (L.) Skeels.

Jambu.

From Algiers, Algeria. Presented by Dr. L. Trabut. Received November 10, 1911.

"Originally from Madagascar. A very vigorous tree, bearing large leaves and large, sweet fruits." (*Trabut.*)

See No. 31571 for previous introduction.

32073. SECALE CEREALE L.

Rye.

Purchased from Landwirtschaftsvereins, Insternburg, Germany. Brought in by Mr. E. Brown, Botanist in Charge, Seed Laboratory, Bureau of Plant Industry. Numbered November 11, 1911.

Variety *multicaule*. "*Johannisroggen, Johannistaggrogen, Seigle de la Saint-Jean*. A variety commonly cultivated in northern Germany in mixture with *Vicia villosa* for green forage and hay. It is also a favorite grain variety in East and West Prussia. It can be seeded any time between June 15 and October 15, and when seeded early furnishes abundant green fodder or pasture in the fall and green fodder, hay, or grain in the spring. It is an especially hardy variety adapted to a wide variety of soils, and on account of its stooling habit less seed is required than for other varieties of rye. This should prove an especially valuable forage crop throughout the sections of the South where it is difficult to maintain a good turf for pasture or meadow on account of the lack of vegetable matter or because of an acid condition of the soil." (*Brown.*)

32074 to 32077.

From Alhajuela, Panama. Collected by Mr. August Busck. Presented by Mr. William R. Maxon, United States National Museum, Washington, D. C. Received November 10, 1911.

Plants of the following:

32074 to 32076. (Undetermined.)

Orchid.

32077. *HIERACIUM* sp.?

32078. MEDICAGO FALCATA L.

From Tomsk, Siberia. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, November 13, 1911.

"(No. 1636a, August 22, 1911.) A tall semierect form of *Sholteek* growing 4 to 5 feet in height, having much foliage and bearing large pods containing heavy seeds. Apparently shatters very little. Collected in the botanical garden of the University of Tomsk. To be tested for forage purposes and for hybridization exclusively." (*Meyer.*)

32079. CHRYSOPHYLLUM sp.

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received December 19, 1911.

"In Guarany this is called *aguay*. A quick-growing tree reaching a height of 20 meters [65 feet]; it fruits in the fourth year. The bark is smooth, the wood white and

very light. The fruit is something the size and shape of an olive, very astringent and not relished when fresh, but is very widely used hereabouts in preserves, for which purpose it is excellent." (*Mead.*)

32080 and 32081. ASPARAGUS SUBLATUS Steud. Asparagus.

From Jeolikote, United Provinces, India. Presented by Mr. Norman Gill, superintendent, Kumaon Government Gardens. Received November 13, 1911.

Seeds of the following; quoted notes by Mr. Gill:

32080. "Barb asparagus."

Distribution.—On the subtropical slopes of the Himalayas at an altitude of 2,000 to 4,000 feet, from Kumaon to Nepal in northern India.

32081. "Without barbs."

32082. GARCINIA sp.

From China. Presented by Mr. George Campbell, Kiayingchow, on native boat en route to Swatow, China. Received November 14, 1911.

"This morning (October 6, 1911) my boat stopped at a market town and I strolled through it. I found a few specimens of a fruit called *Sann pee pah*, or wild loquat. I brought one back to the boat with me. It was the size of an unhulled walnut and looked like a yellow apple, save that it was spherical and marked into seven segments. It peeled like an apple.

"The flesh was about as thick as the hull of a walnut and very sour, but inclosed a core of seven lobes, each, with the exception of one, containing a seed. Each seed was inclosed in a sweet pulp very pleasant to the taste and suggesting the mangosteen to me." (*Campbell.*)

32083. ANNONA RETICULATA L. Bullock's-heart.

From Cairns, North Queensland, Australia. Presented by Prof. Charles E. Wood, manager, Kamerunga State Nursery. Received November 15, 1911.

Cuttings of this species introduced for the work of the Office of Foreign Seed and Plant Introduction in bringing together all the improved varieties of this genus for trial.

32084 to 32086. IPOMOEA BATATAS (L.) Poir. Sweet potato.

From Port Moresby, Papua. Presented by Mr. A. C. English, Barodobo Plantation, Kapa Kapa, Port Moresby. Received November 15, 1911.

"Seeds of three varieties that we have here in this locality, which are great tuber producers. One has a white skin and white flesh, one white skin and deep yellow flesh, and one a pink skin and white flesh. Seed from sweet potatoes are rarely known here, even amongst the natives who plant them extensively." (*English.*)

32087. CASTANOSPERMUM AUSTRALE Cunn. and Fraser. Moreton Bay chestnut.

From Brisbane, Queensland, Australia. Presented by Mr. Frederick Manson Bailey, Colonial Botanist, Department of Agriculture and Stock, Brisbane. Received November 16, 1911.

"In the scrub near Kuranda we noticed trees bearing pods about the size and shape of a banana, but at least twice the diameter. Upon opening the pods they were found to contain huge beans that look very much like chestnuts. They have a leathery skin, and the interior is white and not very hard, about the consistency of a nut. I tasted one of the beans, although I was told that it was poisonous. It tasted very much like a nut, but had no distinctive flavor. In spite of the poisonous nature of

the bean, the 'black fellows' have learned to use it as a food. They first roast the beans in hot ashes, then skin them and pound the white flesh into coarse flour. They fill a basket with this flour and place it in running water all night. In this way the poisonous principle is washed out." (*Dr. Alexander Graham Bell.*)

Distribution.—A tall tree found in the valleys of the Endeavour and Brisbane rivers in the State of Queensland, and in the valley of the Clarence River in the province of New South Wales in Australia.

32088. CICER ARIETINUM L.

Chick-pea.

From Nogales, Sonora, Mexico. Presented by Mr. Alexander V. Dye, American consul. Received November 11, 1911.

"From the Mayo River Valley. Known locally as *Garbanzo gordo*. While there is only one variety grown for commercial purposes, those raised in the Mayo River Valley are usually considered larger and better." (*Dye.*)

32089. MEDICAGO SATIVA VARIA (Mart.) Urb.

Sand lucern.

From Isere, France. Presented by Dr. L. Trabut, Algiers, Algeria. Received November 18, 1911.

32090. LEUCADENDRON MELLIFERUM (Thunb.) W. F. Wight. See Botanical Notes, etc., p. 60.

From the slopes of Table Mountain, Cape Colony, South Africa. Presented by the Assistant Conservator of Forests, Western Conservancy, Cape Town, at the request of Prof. J. Burt Davy, Pretoria, Transvaal. Received November 20, 1911.

See No. 28016 for previous introduction.

32091. ASPARAGUS sp.

Asparagus.

From Geok Tapa, Aresch District, Elisabethpol Government, Trans-Caucasia, Russia. Presented by Mr. A. Schelkownikow, Chaldan station, Trans-Caucasia, Russia, at the request of Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry. Received November 21, 1911.

"Seeds of the large wild asparagus, which grows so well in this vicinity." (*Schelkownikow.*)

A large asparagus which so impressed Mr. Meyer that he made a special effort to have seeds secured for the work now being undertaken in breeding rust-resistant forms and also improved forms for the use of florists.

32093 to 32110.

From India. Collected by Mr. C. V. Piper, Bureau of Plant Industry. Received November 17, 1911.

The following material; quoted notes by Mr. Piper:

32093. ALOCASIA MACRORRHIZA (L.) Schott.

"(No. 104.)"

32094. PHASEOLUS VULGARIS L.

Bean.

"(No. 97.) White beans purchased in the market of Calcutta, September 12, 1911."

32095. PHASEOLUS VULGARIS L.

Bean.

"(No. 98.) White beans purchased in the market of Calcutta, September 12, 1911."

32093 to 32110—Continued.

32096. *CICER ARIETINUM* L.

Chick-pea.

“(No. 69.) Bought in the market at Trichinopoli, August 29, 1911.”

32097. *CUCURBITA PEPO* L.

Squash.

“(No. 95.) Bought on the market at Trichinopoli, August 31, 1911. Large, dull, pale orange; subglobose; deeply ribbed with about ten ribs.”

32098. *ELAEOCARPUS SERRATUS* L.

“(No. 81.) An olivelike fruit bought in the market at Colombo, August 28, 1911.”

Distribution.—A tree found from the tropical slopes of the Himalayas, where it grows as far up as 3,000 feet in the province of Sikkim, southeastward through India and the Malay Islands to Java.

32099. (Undetermined.)

“(No. 82, August 29, 1911.) A shrub, bearing large pink flowers. This grows 3 to 10 feet high and is very ornamental. It is abundant at Newara Eliya, Ceylon, altitude of 6,000 feet.”

32100. (Undetermined.)

“(No. 83, August 27, 1911.) An irislike plant with loose panicles of blue flowers. Decidedly ornamental. Native at Newara Eliya, Ceylon.”

32101. *RUBUS* sp.

“(No. 84, August 27, 1911.) A shrub much like the common blackcap. Fruits in large clusters, red but tomentose. Flavor good. Flowers pink. Abundant at Newara Eliya, Ceylon. Altitude 6,000 feet.”

32102. *BERBERIS* sp.

Barberry.

“(No. 86, August 27, 1911.) A common species at Newara Eliya, Ceylon, altitude 6,000 feet. It closely resembles *Berberis vulgaris*, but the fruits are black.”

32103. *RHODOMYRTUS TOMENTOSA* (Ait.) Wight.

“(No. 87, August 27, 1911.) A melastomaceous shrub with pink flowers and canescent leaves. Grows 3 to 6 feet high. Quite ornamental. Common at Newara Eliya, Ceylon, 6,000 feet altitude.”

32104. *BENINCASA HISPIDA* (Thunb.) Cogniaux.

Wax gourd.

The wax gourd has heretofore been listed in the inventories as *Benincasa cerifera*, a name published in 1818 by Savi (Bibliotheca Italiana, vol. 9, p. 158), who cited *Cucurbita cerifera* Fischer (Catalogue du Jardin des Plantes à Gorenki, 1812, p. 32), a name not accompanied by a description. The attention of the Office of Foreign Seed and Plant Introduction has recently been called to the publication in 1881 of the name *Benincasa hispida* Cogniaux (De Candolle, Monographiae Phanerogamarum, vol. 3, p. 513) based on *Cucurbita hispida* Thunberg (Flora Japonica, 1784, p. 322) which appears to be the correct name for this species.

“(No. 94.) Purchased in the Trichinopoli market, August 31, 1911. Large, cylindrical, 12 to 18 inches long by 6 to 8 inches in diameter. Very white and waxy fruit.”

This vegetable, commonly used by the Chinese for vegetable soups and also candied as a sweetmeat wherever it grows, is recommended to amateurs who are experimenting with new vegetables. It has been grown successfully near Washington, D. C.

32093 to 32110—Continued.**32105.** *PHYLLANTHUS ACIDA* (L.) Skeels.

"(No. 96.) A round, green, gooseberrylike fruit bought in the market at Colombo, Ceylon, August 28, 1911."

See No. 23472 for previous introduction.

32106. *CITRUS* sp.**Orange.**

"(No. 88.) Best orange at Colombo. Round, green, light skin, very juicy, subacid, much rag, many seeds."

32107. *CITRUS DECUMANA* (L.) Murray.**Pomelo.**

"(No. 99, September 4, 1911.) From Calcutta. Large globose pomelo of the dry type. Flesh yellow; good quality, but not as good as the Siam."

32108. *BELOU MARMELOS* (L.) Lyons.**Bael.**

"(No. 90, August 29, 1911.) From Colombo."

See No. 24450 for description.

32109. *CALAMUS VIMINALIS* Willd.**Rattan.**

"(No. 93, August 31, 1911.) From Trichinopoli. A peculiar fruit said to be used in curries. Flesh very acid. A rattan palm."

"It is a stout scrambling and climbing species, with cane thin but strong. It makes excellent walking sticks and is the chief rattan of the Malay Peninsula." (*Watt, Commercial Products of India.*)

Distribution.—A climbing palm found in the Malay Islands.

32110. *SPONDIAS CYTHEREA* Sonnerat.**We fruit.**

"(No. 91.) Bought in the market at Colombo, August 28, 1911. Fruit smooth, oval, size of a large hen's egg, each containing one stone. Flesh firm, yellowish, subacid, pleasant to taste, odor of pineapple."

32111 to 32135.

Collected by Mr. C. V. Piper, of this Department. Received November 20, 1911.

The following material; quoted notes by Mr. Piper:

32111. *POLYTRIAS DIVERSIFLORA* (Steud.) Nash.

"(No. 41.) Collected at Batavia, July 23, 1911. The common lawn and pasture grass of Java at low altitudes. Makes a good lawn. Horses as well as cattle eat it readily and seem to thrive on it. Introduced in the Philippines, where it is spreading."

Distribution.—Java, and introduced in other tropical regions.

32112. *STIZOLOBIUM* sp.

"(No. 52, July 27, 1911.) The native Java form cultivated in the botanic garden at Buitenzorg."

32113. *PANICUM NUMIDIANUM* Lam.

"(No. 55, August 3, 1911.) Collected at Karanganjar, Java. The same as Para grass. To be tested in comparison with the American form."

Distribution.—Northern Africa, India, and generally distributed in the Tropics.

32114. *MEIBOMIA HETEROPHYLLA* (Willd.) Kuntze.

"(No. 65, August 24, 1911.) From Peradeniya, Ceylon. Similar to but much larger than *Meibomia triflora*, now abundantly established in Florida. If this proves equally aggressive it will be a valuable pasture plant."

Distribution.—From the plains of India eastward through the Malay Archipelago, including the Philippines, and in China.

32111 to 32135—Continued.

32115. ARUNDINELLA sp.

"(No. 70, August 11, 1911.) From mountains near Garoet, Java. Makes a good sward and is probably valuable as pasturage. Seed habits good."

32116. AXONOPUS COMPRESSUS (Swartz) Beauv.

"(No. 71, July 26, 1911.) Best lawn grass in Buitenzorg; will grow in dense shade."

Distribution.—The West Indies and southward to Brazil; introduced into the Tropics of the Old World.

32117. SYNTERISMA SANGUINALIS (L.) Dulac.

"(No. 72, July 25, 1911.) Collected in shady ground at Hotel des Indes, Batavia, Java. A lawn grass much like St. Augustine, but hardly as good."

32118. SYNTERISMA DEBILIS (Desf.) Skeels.

(*Panicum debile* Desf., 1800, Flora Atlantica, vol. 1, p. 59.)

The seeds of this grass, received from Java as an unidentified species of Syntherisma, belong to *Panicum debile* Desfontaines. This species seems not to have been placed in the genus Syntherisma heretofore.

"(No. 73, July 26, 1911.) Growing in an orchard near Buitenzorg. Much smaller and more slender than our crab-grass, but perhaps of similar value. Makes a good turf."

Distribution.—Found on the plains and low hills of India and extends eastward through the Malay Archipelago as far as the Philippines.

32119. PANICUM MAXIMUM HIRSUTISSIMUM Nees.

"(No. 74, July 2, 1911.) Growing at Singalong Experiment Station, Manila, P. I. Smaller than Guinea grass. Decumbent at base, and roots at nodes."

32120. SYNTERISMA LONGIFLORA (Retz.) Skeels.

(*Paspalum longiflorum* Retz., 1786, Observationum Botanicarum, vol. 4, p. 15.)

The seeds of this grass, received from Ceylon, were identified as *Paspalum longiflorum* Retz., which seems not to have been heretofore placed in the genus Syntherisma.

"(No. 75, August 25, 1911.) From Peradeniya, Ceylon. A creeping species rooting at the joints, which makes a good but thin turf."

Distribution.—Found in India from Kashmir to Ceylon, and in Malakka; is generally distributed in the tropical and subtropical regions of the Eastern Hemisphere.

32121. PTEROCARPUS INDICUS Willd.

"(No. 42, August 15, 1911.) From Singapore. A beautiful shade tree, elm-like in form, but with drooping branches. Abundantly planted in the Malay Peninsula, but, according to Mr. Ridley, is not native. Said to differ from the true *Pterocarpus indicus* in having larger pods."

Distribution.—A tall tree found throughout India and eastward through China and the Malay Archipelago as far north as the Philippines.

32122. SALAKKA EDULIS Reinw.

"(No. 44, July 24, 1911.) From Batavia, Java. A palm cultivated in Java. The fruit consists of three carpels enclosed in a scaly envelope. Each carpel is fleshy, with a large central seed. The flesh is firm and much like quince in flavor. Abundant in the Java markets in July. Malay name *Salak*."

Distribution.—Known only from the islands of the Malay Archipelago.

32111 to 32135—Continued.

32123. *SESBAN* sp.

"(No. 45, August 9, 1911.) A large shrub or small tree grown on the dikes surrounding the rice paddies near Surabaya, Java. *Agati grandiflora* and *Cajan indicum* are also grown in the same way."

32124. *MYRISTICA* sp.

"(No. 46, July 26, 1911.) Purchased in the market at Batavia, Java. A seed used by the Javanese as a cheap substitute for the nutmeg."

32125. *PTYCHORAPHIS AUGUSTA* (Kurz) Beccari.

"(No. 51, July 20, 1911.) An ornamental palm from Singapore."

Distribution.—Found in the Nicobar Islands in the Indian Ocean.

32126. *DIALIUM INDUM* L.

"(No. 53, July 20, 1911.) Fruit like a tamarind in structure and flavor. Purchased in the market at Singapore."

Distribution.—A tree with alternate pinnate leaves found in the island of Java.

32127. *PASSIFLORA EDULIS* Sims.

Passion fruit.

"(No. 57, July 19, 1911.) Bought in the market at Singapore. Fruit yellow, ovoid, 2 inches long. Pulp subacid, seedy."

32128. *IMPATIENS* sp.

"(No. 58, August 24, 1911.) From Peradeniya, Ceylon. A species with rose-colored flowers."

32129. *IMPATIENS* sp.

"(No. 59, August 1, 1911.) Collected on high mountains near Garoet, Java. Flowers rose colored, perhaps two species mixed."

32130. *RUBUS* sp.

Raspberry.

"(No. 63, August 1, 1911.) Collected in the mountains near Garoet, Java. Vines very large, ascending. Leaves grapelike. Flowers and fruits in large panicles. Fruit a raspberry, salmon yellow, subacid, of fair quality."

32131. *RUBUS* sp.

Raspberry.

"(No. 64, August 1, 1911.) Collected in the mountains near Garoet, Java. Leaves digitate, 5 to 7 leaflets. Fruit a raspberry red, with large pyrene, subacid, juicy."

32132. *CITRUS* sp.

Orange.

"(No. 66, July 24, 1911.) From Batavia, Java. Fruit dark green, 2½ inches in diameter. Stem rather loose. Flesh yellow, subacid, juicy, but much rag and many seeds."

32133. *CITRUS* sp.

Orange.

"(No. 67, July 20, 1911.) From Singapore. A loose-skinned, yellow, very seedy, sour kid-glove orange."

32134. *TRIPHASIA TRIFOLIATA* (L.) DC.

"(No. 68, July 23, 1911.) A common hedge plant at Batavia, Java. Fruit red, pyriform, about 1 inch long."

32135. *ELETTARIA SPECIOSA* Blume.

"(No. 69, August 2, 1911.) From Garoet, Java. A fruit commonly seen in Javanese markets."

Distribution.—A herbaceous perennial found in damp woods on the island of Java.

32136. MEDICAGO SATIVA L.**Alfalfa.**

From Tulare, Cal. Presented by Mr. J. T. Bearss, Agricultural Experiment Station, Kearney Park, Fresno Co., Cal. Received November 23, 1911.

"One of the surviving plants from the plat of Arabian alfalfa (No. 8823?), but presumably a hybrid between this and the Turkestan (No. 1151) on an adjoining plat." (Bearss.)

32137 and 32138. PASSIFLORA INCARNATA L.**Maypop.**

From Salem, Mass. Purchased from Mr. Harlan P. Kelsey, Higginson Square. Received November 22 and 24, 1911.

Seeds and plants procured for breeding purposes and for the collection being made by the Office of Foreign Seed and Plant Introduction of all the species of this genus having edible fruits for use in hybridization work.

32141 and 32142. PHOENIX DACTYLIFERA L.**Date.**

From Cairo, Egypt. Received through Mr. George J. Salem, November 22, 1911.

Seeds of the following:

32141. *Zaglool.***32142.** *Samany.*

"These are supposed to be the best in the market and are grown extensively in the delta, particularly in the gardens of Alexandria, Rosetta, Edku, and Cairo. They are used for the table, confectionery, and exportation." (Salem.)

32143. CUCUMIS MELO L.**Muskmelon.**

From Beni Suef, Egypt. Received through Mr. George J. Salem, Cairo, November 22, 1911.

"*Domiri.* This melon is somewhat larger and sweeter than our cantaloupes, and could keep for several days. It is grown in the province of Beni Suef and sold in the markets of the large cities for only a few days." (Salem.)

32144 to 32150. SOLANUM NIGRUM L.**Nightshade.**

Presented by Mr. K. Portele, agricultural ministry, Vienna, Austria. Received November 23, 1911.

Seeds of the following:

32144 to 32149. From Austria.**32144.** From Krakow.**32145.** From Linz, Upper Austria.**32146.** From Halterthal, near Vienna.**32147.** From Trieste.**32148.** Cultivated in the botanic garden at Vienna. Origin unknown.**32149.** From Pratu, near Vienna.**32150.** From Breslau, Germany.**32151 and 32152. FEIJOA SELLOWIANA Berg.**

From Los Angeles, Cal. Presented by Mr. H. Hehre. Received November 15, 1911.

Seeds of the following:

32151. "The fruits of this variety weighed nearly $1\frac{1}{2}$ ounces each. The quality is good when the fruit is properly ripened. The flesh is somewhat granular." (R. A. Young.)

32152. "The fruits of this variety weighed nearly 2 ounces each. The quality is very good when the fruit is properly ripened, the flavor being mild and the flesh less granular than in some forms." (R. A. Young.)

32153 and 32154. CONVULVULUS spp.**Rose-root.**

From Puerto Orotava, Teneriffe, Canary Islands. Presented by Dr. George V. Perez. Received November 23, 1911.

Seeds of the following:

32153. CONVULVULUS FLORIDUS L. f.**Rose-root.**

"One of the most interesting and striking plants in the Canary Islands is this shrubby *Convolvulus*, known locally as *guadil*. This, together with a closely allied species, *C. scoparius*, is sometimes known as rose-root and is said to yield oil of roses. The *guadil* is, however, more interesting as an ornamental flowering shrub than for any economic purposes to which at one time it may have been applied. It belongs to the bindweed order (*Convolvulaceae*), although nothing can be less like a *Convolvulus* in habit, and is one of the comparatively few examples of this order (containing the jalap plant, the sweet potato, the scammony, and the showy ipomoeas), possessing an upright stem and a treelike habit. It may be described as a compact shrub from 4 to 6 feet in height, with a stout woody stem and numerous branches. The branches, especially in the young state, are white powdered, as also are the abundant linear undulate leaves. The latter are about 3 or 4 inches long, attenuated toward the petiole, with rounded and somewhat emarginate tips. The flowers are abundantly produced in large loose terminal panicles. The sepals are ovate acuminate, about 2 lines long. The corolla is about one-half to three-quarters of an inch in diameter and pure white. The capsule is conical and slightly villose at the apex. When in flower the plant appears as if covered with newly fallen snow. It is one of the few native plants which awakens the enthusiasm of local residents of Teneriffe. According to Dr. Perez the *guadil* was an object of high regard by the Guanches, the aboriginal race of the island. This can well be understood, for when in flower it is one of the brightest and most attractive objects in the Teneriffe landscape. The pale powdered green of the leaves forms an excellent background for the masses of pure white flowers. The only pity is it is so rarely seen. In the search for rose-roots for export purposes this and the allied species have been nearly exterminated in the wild state. In Teneriffe it grows from sea level up to elevations of about 1,000 feet. It evidently prefers a free porous soil and thrives in exposed situations on rocks and slopes. In rich soil the plant appears to put on a looser habit and when laden with flowers the panicles become almost pendulous. It is readily increased by seed, and as it is a fast grower it should flower in the second or third year." (Extract from D. Morris, *Kew Bulletin of Miscellaneous Information*, 1893, pp. 133-134.)

32154. CONVULVULUS SCOPARIUS L. f.**Rose-root.**

"This, as its name denotes, is a *Convolvulus* with the habit of the common broom. It is an erect shrub 7 to 8 feet high with a few long narrow branches and somewhat short linear leaves. The flowers are produced in many flowered axillary cymes. The corolla is slightly plaited with a 5-partite limb; it is tinged with red outside and white within. This is known locally as *Leña Noel* or *Leña Loel*. It is only rarely met with; Teneriffe specimens in the Kew Herbarium are from Guia on the southwestern slopes of the island and from Barranco Santo. It is said to be more common at Palma, but owing to the excessive digging of the roots many years ago for export purposes it is restricted to very few localities.

"There is a single specimen of the root of *Convolvulus scoparius* in the Kew Museum. It is about 8 inches long, 2½ inches wide, and 1 inch thick. The heartwood occupies about three-fourths of the entire diameter of the specimen and is of a distinct orange-yellow color, very dense, marked by closely lying

32153 and 32154—Continued.**32154—Continued.**

annual rings and numerous very fine medullary rays, the spaces between them being filled with small, partially open vessels. The sapwood is very much lighter in color and is comparatively soft and easily cut. It was sent to the museum about 1850 and still retains its roselike smell. A sample of oil in the museum is of clear amber color and possesses a distinct though not a penetrating odor of roses.

"In Lindley's *Flora Medica* (1838), p. 400, there is the following note on this plant:

"Wood perfumed, smelling strongly of roses, yellowish fawn color veined with red, burning readily when lighted. Taste bitter, balsamic. Yields by distillation an essential oil of bitter balsamic flavor; little used, except, according to Feé, for adulterating oil of roses."

"The latest information on the subject is probably contained in Piesse's *The Art of Perfumery* (1879), p. 188, as follows:

"When rosewood, the lignum of the *Convolvulus scoparius*, is distilled, a sweet-smelling oil is procured, resembling in some slight degree the fragrance of the rose, and hence its name. At one time, that is, prior to the cultivation of the rose-leaf geranium, the distillates from rosewood and from the root of the *Genista canariensis* (Canary rosewood) were principally drawn upon for the adulteration of real otto of roses; but as the geranium oil answers so much better the oil of rhodium has fallen into disuse, hence its comparative scarcity in the market at the present day, though our grandfathers knew it well. One hundredweight of wood yields about 3 ounces of oil.

"Ground rosewood is valuable as a basis in the manufacture of sachet powders for perfuming the wardrobe." (*Extract from D. Morris, Kew Bulletin of Miscellaneous Information, 1893, pp. 134-136.*)

32155 to 32157.

From southeastern Russia. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, November 25, 1911.

Seeds of the following:

32155. HELIANTHUS ANNUUS L.**Sunflower.**

From Bezenshook (Besentschuk), Government of Samara, southeastern Russia.

"(No. 1704a, November 8, 1911.) A variety of sunflower called *Pantsernara*, meaning armor-plated; originated by Mr. Karsin in Russia. The seeds of this remarkable variety are provided with an extremely hard shell, being thickened with silica, and the insects that have been playing such havoc heretofore with the sunflower-seed crop in Russia find it beyond their power to penetrate the hulls of this variety. Obtained from Prof. N. M. Tulaikoff, director of the agricultural experiment station at Bezenshook." (*Meyer.*)

32156. TRITICUM DURUM Desf.**Wheat.**

From Bezenshook (Besentschuk), Government of Samara, southeastern Russia.

"(No. 1705a, November 8, 1911.) A large-grained, uncommon, summer variety of durum wheat, called *Amerikanka*. Grown here and there in southeastern Russia, having apparently originated in these regions. Obtained like the preceding number." (*Meyer.*)

32157. TRITICUM DURUM Desf.**Wheat.**

From Bezenshook (Besentschuk), Government of Samara, southeastern Russia.

"(No. 1706a, November 8, 1911.) A new and valuable winter variety of black-bearded durum wheat, having very long open ears. It is called *Teiskaia*

32155 to 32157—Continued.**32157—Continued.**

and originated at the Bezenshook Agricultural Experiment Station. This variety is proving extremely hardy, having survived snowless winters, when other winter wheats were either killed out entirely or severely injured. It is expected that within a few years this wheat will play a big rôle in the agricultural development of the Government of Samara. Obtained like the preceding numbers." (*Meyer.*)

32158 and 32159. CARICA PAPAYA L.**Papaya.**

From Miami, Fla. Grown at the Subtropical Plant Introduction Garden. Received November 25, 1911.

Seeds of the following:

32158. "Grown from No. 28536. Fruit medium size, globular, from 5 to 6 inches in diameter, with very tender meat of excellent flavor and pale yellow or orange colored. The parent tree of this variety produced pear-shaped fruits of large size, demonstrating the great variation of papayas in the shape and size of fruit when raised from seed." (*H. F. Schultz.*)

32159. "Grown from No. 28534. Fruit pyriform, of large size, 10½ inches long and 5½ inches in diameter, weighing 10 pounds. The meat is rich yellow and of excellent flavor, nearly 2 inches thick. Seeds quite numerous, but easily separated from the meat. The tree matured its fruit within 16 months from seed." (*H. F. Schultz.*)

32160 to 32162. COFFEA spp.**Coffee.**

From Mayaguez, Porto Rico. Presented by Mr. D. W. May, director, Agricultural Experiment Station. Received November 29, 1911.

Seeds of the following:

32160. COFFEA sp.

"Ceylon hybrid."

32162. COFFEA ARABICA L.

"Native variety."

32161. COFFEA sp.

"*Maragogipe.* Java variety."

32163. ANNONA DIVERSIFOLIA Safford. Ilama, or anona blanca.

From Acapulco, Mexico. Presented by Mr. Marion Letcher, American consul, through Mr. W. E. Safford, Bureau of Plant Industry. Received December 1, 1911.

Seeds.

32164. COLOCASIA sp.**Dasheen.**

From Kiayingchow, China. Presented by Mr. George Campbell. Received December 1, 1911.

"*Penang.* The tubers of this variety are quite uniform in size and shape, and are about the size of a goose egg. The people here think them far superior to the kinds I sent you previously (Nos. 27297 and 27298)." (*Campbell.*)

"The tubers resemble the Japanese dasheens in appearance and are very slightly acrid when raw. The cooked tubers are mealy, grayish white in color, and the flavor is good, though a little strong and suggestive of the taro." (*R. A. Young.*)

32167. MENTHA PIPERITA L.**Peppermint.**

From Kobe, Japan. Presented by Mr. George N. West, American consul. Received December 2, 1911.

Roots.

32168. PRUNUS SUBCORDATA Benth.

From Lassen County, Cal., west of Honey Lake, at an altitude of about 4,700 feet.

Collected by Mr. Karl Kair; presented by Mr. Marsden Manson, San Francisco.

Received September 7, 1909. Numbered for convenience in recording distribution December 4, 1911.

Variety *kelloggii*. "A small tree, native of dry rocky hills of northern California, with thick leaves and white flowers changing to rose. The dark-red, clingstone fruits contain a subacid flesh and are used for drying and preserving. For testing and breeding purposes in dry regions of the United States."

Plants of this variety were formerly distributed under No. 25933.

32169. ARALIA CALIFORNICA S. Watson. California spikenard.

From Mill Valley, Marin Co., Cal., Presented by Mr. Charles G. Adams, at the request of Mr. G. P. Rixford, Bureau of Plant Industry. Collected November 15, 1911. Numbered December 6, 1911.

"In moist, cool ravines where the sun only slants athwart the branches and a certain dankness always lingers the California spikenard scents the air with its peculiar odor, It closely resembles *Aralia racemosa* of the Eastern States, but it is a larger, coarser plant in every way. It throws up its tall stems with a fine confidence that there will be ample space for its large leaves to spread themselves uncrowded. Its feathery panicles of white flowers are followed by clusters of small purple berries and are rather more delicate than we should expect from so large a plant." (*M. E. Parsons, The Wild Flowers of California*, pp. 77-78.)

"Introduced for the breeding experiments with the Japanese udo (*Aralia cordata*) and the American spikenard (*Aralia racemosa*) in an effort to improve the character of the Japanese vegetable." (*Fairchild*.)

32170 to 32172.

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé. Received December 4, 1911.

The following material; quoted notes by Mr. Wercklé:

32170. DIOSCOREA sp.

"*Papa caribe*."

32171. (Undetermined.)

"A very large and good green sapote."

32172. PERSEA PITTIERI Mez.

Avocado.

"A very early variety, but rather poor. Good quality, but little flesh."

32173. ARALIA CORDATA Thunb.

Udo.

From Chevy Chase, Md. Grown by Mr. David Fairchild, Bureau of Plant Industry, on his place, "In the Woods."

Collected November 5, 1911.

"Seeds collected from plants 2, 3, and 4 years old." (*Fairchild*.)

32174. THEA sp.

Tea.

Presented by Mr. J. R. C. Boyer, Cranford, N. J. Received through Mr. E. C. Green, Pomologist in Charge, South Texas Plant Introduction Garden, Brownsville, Tex., December 2, 1911.

"Chinese tea seed, not of the regular tea plant, but, as I understand it, of the Camellia family. The seeds are crushed for the oil, which is used as an edible oil and for many other purposes." (*Boyer*.)

32175 to 32245.

From Siberia. Collected by Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry. Received November 29, 1911.

Seeds of the following:

32175. TRITICUM POLONICUM L.**Wheat.**

From Omsk, Siberia.

"(No. 1631a, August 9, 1911.) A very large hard wheat, obtained at the agricultural exhibition held in Omsk during July and August, 1911. Said to have been grown at Atbasar, Akmolinsk Government. Called *Afrikanski*, or *Africanum conqum*. To be tested in the semiarid Northwest." (Meyer.)

32176. TRITICUM POLONICUM L.**Wheat.**

From Omsk, Siberia.

"(No. 1632a, August 9, 1911.) A very large hard wheat, obtained like the preceding number. Locality from whence it came not given." (Meyer.)

32177. TRITICUM DURUM Desf.**Wheat.**

From Omsk, Siberia.

"(No. 1633a, August 9, 1911.) A hard summer wheat having blue ears; called *Sineshka*. Said to be very drought resistant and to stand the Siberian climate well, although constant selection has to be practiced to prevent it from deteriorating. Obtained like the preceding numbers." (Meyer.)

32178. MEDICAGO FALCATA L.

From near Ust Kamenogorsk, southwestern Siberia.

"(No. 1635a, October 4, 1911.) A bunchy, upright form of sholteek growing about 2 to 3 feet in height. Pods rather broad and flat, apparently nonshattering. Only two plants found of this variety. These were growing in decomposed rock on a mountain slope facing the Irtysh River. To be tested exclusively for forage purposes and hybridization." (Meyer.)

32179. MEDICAGO FALCATA L.

From near Tomsk, Siberia.

"(No. 1637a, August 24 and 25, 1911.) A sholteek of prostrate habit and very vigorous growth, shoots being over 6 feet long. Pods very large, apparently nonshattering. Found on sandy level stretches of land along the River Tom, 20 to 30 feet above the water. To be tested in meadows where grass is grown for hay production." (Meyer.)

32180. MEDICAGO FALCATA L.

From Barnaul, Siberia.

"(No. 1638a, September 1, 1911.) A sholteek collected in the Kuznetsk district to the east of Barnaul, said to be of vigorous growth. Presented by Mr. N. B. Sokoloff, agricultural instructor at Barnaul. To be tested like No. 1634a (S. P. I. No. 32389)." (Meyer.)

32181. MEDICAGO PLATYCARPA (L.) Trautv.

From near Sminogorsk, southwestern Siberia.

"(No. 1639a, September 21, 1911.) A strange wild alfalfa having yellow flowers and large flat pods of black color when ripe. Seeds very large. Prefers to grow between shrubbery and tall grass on the north slopes of hills. Of erect growth, but needs some support. Apparently not of as great value as a fodder plant as other members of the same genus. To be tested in cool, moist-air sections of the United States." (Meyer.)

32175 to 32245—Continued.

32182. *ONOBRYCHIS VULGARIS* Hill 1756.(*Onobrychis viciaefolia* Scop. 1772.)

From between Chistunka and Sminogorsk, southwestern Siberia.

"(No. 1640a, September 8 to 24, 1911.) The wild Siberian esparcet found along the edges of wheat fields and on stretches of level land that was once in cultivation. Apparently able to stand an unusual amount of cold and drought. Recommended as a forage plant in those sections of the semiarid belt, where the ordinary alfalfa gets winterkilled." (Meyer.)

32183. *ONOBRYCHIS VULGARIS* Hill.

From Omsk, Siberia.

"(No. 1641a, August 9, 1911.) A large-seeded esparcet being tested at the agricultural experiment station near Omsk and promising to become an important forage plant for semiarid western Siberia." (Meyer.)

32184. *ASTRAGALUS* sp.

From near Chistunka, southwestern Siberia.

"(No. 1642a, September 9, 1911.) A species of *Astragalus* bearing a close resemblance to esparcet, found on abandoned wheat fields. Of bunchy erect habits, making many stems, well supplied with almost glabrous foliage. Flowers purplish blue, seed racemes persistent. Eaten by horses and cattle. Of value possibly along with sholteek and esparcet as a forage plant for cool semiarid climates." (Meyer.)

32185. *ASTRAGALUS* sp.

From near Chistunka, southwestern Siberia.

"(No. 1643a, September 8, 1911.) A species of *Astragalus* of somewhat open growth. Main stems being erect, side stems lying more or less on the ground. Foliage not very dense and quite hairy, flowers yellow, seed racemes persistent. Occurring on abandoned wheat fields and along ditches. To be tested like the preceding number, but it is not so promising." (Meyer.)

32186. *ASTRAGALUS* sp.

From near Sminogorsk, southwestern Siberia.

"(No. 1644a, September 24, 1911.) A small serradellalike species of *Astragalus*, occurring on sandy pasture grounds; is browsed by cattle. Of value possibly as a pasture plant on sandy lands in semiarid regions." (Meyer.)

32187. *HEDYSARUM SIBIRICUM* Poir.

From Tomsk, Siberia.

"(No. 1645a, August 22, 1911.) An upright-growing variety that throws up many stems and is well supplied with rather large glabrous foliage. May possess value as a forage plant for the northern sections of the United States and may also serve as a factor in hybridization experiments to be made with the famous sulla (*Hedysarum coronarium*) in making it hardier and available to regions outside the Mediterranean." (Meyer.)

Distribution.—Central Siberia, extending eastward to the region of Lake Baikal.

32188. *HEDYSARUM* sp.

From near Sminogorsk, southwestern Siberia.

"(No. 1646a, September 21 to 24, 1911.) A rare legume found here and there in southern Siberia. Makes a luxuriant growth of leaves when planted in rich soil. Flowers of a purple-violet color and attractive to the eye. Of value like the preceding number, and perhaps of even more importance. Should be tested with great care." (Meyer.)

32175 to 32245—Continued.

32189. *HEDYSARUM SPLENDENS* Fisch.

From near Ust Kamenogorsk, southwestern Siberia.

"(No. 1647a, October 2 and 4, 1911.) A very rare *Hedysarum* occurring on rocky mountain slopes facing south and southeast. Of value possibly as a forage and pasture plant on dry and rocky places. Roots sent under No. 989 (S. P. I. No. 32026); see the latter number for further remarks." (*Meyer.*)

Distribution.—The Altai region of Siberia.

32190. *LATHYRUS GMELINI* (Fisch.) Fritsch. (?)

From Tomsk, Siberia.

"(No. 1648a, August 20, 1911.) Variety *orientalis*. A very vigorous-growing legume found on moist hill slopes here and there in central and southern Siberia and in the Ural Mountains. It is a fodder of great value and eagerly sought by horses and cattle, who devour every bit of it. In protected localities, i. e., between shrubbery, the plants attain a height of 8 feet, but generally they are 3 to 4 feet high. Of value as a very promising forage plant for the cooler sections of the United States." (*Meyer.*)

32191. *VICIA UNIJUGA* A. Braun.

From near Tomsk, Siberia.

"(No. 1649a, August 25, 1911.) An erect-growing plant which attains its greatest luxuriance on fields from which light forest has recently been cut. Seems to possess value as a forage plant on wooded pasture grounds for the cooler sections of the United States." (*Meyer.*)

32192. *LATHYRUS PISIFORMIS* L.

From near Tomsk, Siberia.

"(No. 1650a, August 24, 1911.) A species of wild pea found mostly at the edges of clumps of shrubbery. Grows from 2 to 5 feet tall. Of erect growth, but when tall it needs some support. Eagerly eaten by horses and cattle. Apparently valuable for forage purposes in the cooler sections of the United States." (*Meyer.*)

32193. *LATHYRUS PRATENSIS* L.

From Tomsk, Siberia.

"(No. 1651a, August 18 to 20, 1911.) The well-known meadow pea, which is grown here and there in northwestern Europe for forage purposes. The Siberian form may prove to be extremely hardy and deserves therefore to be tested for forage purposes in the cooler sections of the United States. This plant thrives apparently best when allowed to overrun small scrub in slightly shaded places." (*Meyer.*)

32194. *LENTILLA LENS* (L.) W. F. Wight.

Lentil.

The lentil has heretofore been listed in these inventories as *Lens esculenta*, which was published in 1794 by Moench (*Methodus*, p. 131). The first binomial name given to the lentil was *Ervum lens*, which was published in 1753 by Linnæus (*Species Plantarum*, vol. 2, p. 738). As the type species of the genus *Ervum*, *E. ervilia*, is not congeneric with the lentil but belongs to the genus *Vicia*, which was published on page 734 of *Species Plantarum*, the generic name *Ervum* can not be used for the lentil. The generic name *Lens* was first published in 1754 by Stickman (*Herbarium Amboinense*, reprinted in Linnæus's *Amoenitates Academicæ*, 1759, vol. 4, p. 128) and was based on the plant described and figured in 1747 by Burmann (*Herbarium Amboinense*, vol. 5, p. 5, pl. 4) which

32175 to 32245—Continued.

32194—Continued.

is generally called *Entada scandens*. This use of the generic name *Lens* by Stickman prevents the use of the same name for the lentil. As no other generic name had been published for the lentil up to 1909, Mr. W. F. Wight (Century Dictionary Supplement, p. 719) published the name *Lentilla* by referring to "lens" and "lentil," under which names on pages 3409 and 3410 of volume 4 of the 1895 edition the lentil is described as *Lens esculenta*. When the new edition of 1911 appeared, in which the information first published in the two supplementary volumes 11 and 12 of 1909 was incorporated with the main body of the work, the name *Lentilla lens* was published (vol. 5, p. 3410) under the heading "lentil."

From Barnaul, Siberia.

"(No. 1652a, August 31, 1911.) A small-seeded variety of lentil that is grown by some progressive farmers in southern Siberia as a fodder for horses and milch cows. Prefers a light, sandy soil. Of value possibly for forage purposes in the cooler sections of the semiarid belt." (Meyer.)

32195. *VICIA SATIVA* L.

Spring vetch.

From Barnaul, Siberia.

"(No. 1653a, August 31, 1911.) A vetch that is grown here and there in Siberia for forage purposes. It is said to stand drought very well and promises to be a good fodder plant in semiarid southwestern Siberia." (Meyer.)

32196. *VICIA CRACCA* L.

Vetch.

From Tomsk, Siberia.

"(No. 1654a, August 18 to 20, 1911.) A wild vetch found on slightly shaded places. Likes to overrun low scrub. Is eagerly eaten by horses and cattle. Of value in pastures of the northern United States where some scrub is scattered over the land." (Meyer.)

32197. *VICIA AMOENA* Fisch.

Vetch.

From near Chistunka, southwestern Siberia.

"(No. 1655a, September 8 and 9, 1911.) A sturdy vetch with rather dark green foliage found on dry earth banks. Does not grow over 1 foot in height, but on favorable locations spreads out considerably. Of value possibly as a forage or pasture plant in the northern sections of the United States." (Meyer.)

32198. *VICIA AMOENA* Fisch.

Vetch.

From near Barnaul, Siberia.

"(No. 1656a, September 1 to 3, 1911.) A wild vetch, occurring along the edges of abandoned fields. Apparently a variety of the preceding number and as such the same remarks apply to it." (Meyer.)

32199. *VICIA MEGALOTROPIS* Ledeb.

Vetch.

From near Sminogorsk, southwestern Siberia.

"(No. 1657a, September 21 to 24, 1911.) An exceedingly vigorous species of vetch, often 8 to 10 feet in height when running up into bushes; in open places, however, it reaches only a couple of feet in height. Much relished by horses and cattle and apparently of great promise as a forage plant. To be tested in the cooler sections of the United States." (Meyer.)

Distribution.—Slopes of the mountains in the Altai region of southwestern Siberia.

32175 to 32245—Continued.

32200. *Vicia cracca* L.

Vetch.

From near Chistunka, southwestern Siberia.

"(No. 1658a, September 8, 1911.) A dense-growing variety of climbing vetch found between *Artemisia* growth on a dry plain. Of value for forage purposes in the semiarid belt of the United States." (*Meyer.*)

32201. *Vicia cracca* L.

Vetch.

From near Sminogorsk, southwestern Siberia.

"(No. 1659a, September 21, 1911.) Variety *hircina*. A variety of wild climbing vetch, occurring mostly between low scrub, foliage slightly hairy. Of value like No. 1654a (S. P. I. No. 32196)." (*Meyer.*)

32202. *Vicia cracca* L.

Vetch.

From near Sminogorsk, southwestern Siberia.

"(No. 1660a, September 21, 1911.) A variety of vetch of more upright and vigorous growth than the ordinary *Vicia cracca*; apparently a hybrid. Found between scrub on the north slope of a hill. Valuable possibly for forage purposes in the northern United States." (*Meyer.*)

32203. *Vicia* sp.

Vetch.

From near Sminogorsk, southwestern Siberia.

"(No. 1661a, September 21, 1911.) A vetch of vigorous yet graceful growth, having deep-green, finely pinnated foliage and bearing many seed pods on long stems. Found between scrub on the north slope of a hill. Valuable apparently for forage purposes." (*Meyer.*)

32204. *Vicia sepium* L.

Vetch.

From near Tomsk, Siberia.

"(No. 1662a, August 24, 1911.) A rather small-growing vetch occurring on open sandy plains. Of value possibly as a forage plant on sandy lands in cool semiarid regions." (*Meyer.*)

Distribution.—Throughout Europe and eastward to the region of Lake Baikal in Siberia.

32205. *Vicia amoena* Fisch.

Vetch.

From near Chistunka, southwestern Siberia.

"(No. 1663a, September 9, 1911.) A rather large vetch found along a ditch on a dry plain. Apparently of value for forage purposes in semiarid regions." (*Meyer.*)

32206. *Vicia* sp.

Vetch.

From near Sminogorsk, southwestern Siberia.

"(No. 1664a, September 21, 1911.) A vetch growing in dense shade between shrubs on the north slope of a hill. Has an abundance of juicy light-green foliage that seems to make this plant desirable for forage purposes in cool shady locations." (*Meyer.*)

32207. *Trifolium lupinaster* L.

Clover

From western Siberia.

"(No. 1665a, August 24 to September 21, 1911.) A wild clover not growing to large size and but scantily furnished with foliage. Withstands extreme droughts and is able to grow on very sterile soils. Of value as an element in pasture grounds in cold semiarid regions." (*Meyer.*)

32175 to 32245—Continued.

32208. *TRIFOLIUM MEDIUM* Huds.

Clover.

From Tomsk, Siberia.

"(No. 1666a, August 22, 1911.) A clover resembling the ordinary red clover very much, but the leaves are almost glabrous and the whole plant of a denser, more even growth. Apparently able to stand considerable drought. Of value possibly as a forage plant in semiarid regions." (*Meyer.*)

32209. *TRIFOLIUM HYBRIDUM* L.

Alsike clover.

From near Sminogorsk, southwestern Siberia.

"(No. 1667a, September 18 to 20, 1911.) A clover found in moist places and along low ditches in peaty and clayey soil. Apparently of value on pasture lands that are subject to inundation at times. Seems to make its heaviest growth toward the end of summer, which indicates that it will probably thrive better in cool moist-air localities than in warm and dry regions." (*Meyer.*)

32210. *TRIFOLIUM PRATENSE* L.

Red clover.

From near Sminogorsk, southwestern Siberia.

"(No. 1668a, September 18, 1911.) A rather vigorous form of red clover found in a ditch running through stony land. Possibly somewhat hardier than the ordinary clover." (*Meyer.*)

32211. *TRIFOLIUM INCARNATUM* L.

Crimson clover.

From Omsk, Siberia.

"(No. 1669a, July 22, 1911.) A clover obtained by my interpreter from the agricultural exhibition held in Omsk during the summer of 1911." (*Meyer.*)

32212. *TRIFOLIUM HYBRIDUM* L.

Alsike clover.

From Omsk, Siberia.

"(No. 1670a, July 22, 1911.) A clover that passes under the name *black clover*. Obtained like the preceding number." (*Meyer.*)

32213. *TRIFOLIUM REPENS* L.

White clover.

From Omsk, Siberia.

"(No. 1671a, July 22, 1911.) A clover that passes under the name *yellow clover*. Obtained like the preceding numbers. (*Meyer.*)

32214. *TRIFOLIUM PRATENSE* L.

Red clover.

From Omsk, Siberia.

"(No. 1672a, July 22, 1911.) A sample of clover obtained like preceding numbers." (*Meyer.*)

32215. *TRIFOLIUM REPENS* L.

White clover.

From Tomsk, Siberia.

"(No. 1673a, August 19, 1911.) A white clover collected in the vicinity of Tomsk, Siberia." (*Meyer.*)

32216. *FESTUCA ELATIOR* L.

Meadow fescue.

From near Widrichta, southwestern Siberia.

"(No. 1674a, September 30, 1911.) A grass of tall growth, with many spikes; found on earth banks. Of value possibly as a fodder plant in the colder sections of the United States." (*Meyer.*)

32175 to 32245—Continued.

32217. *AGROSTIS ALBA* L.

Creeping bent-grass.

From near Widricha, southwestern Siberia.

"(No. 1675a, September 30, 1911.) A grass of tall, airy growth, found at the foot of an earth bank. Possibly of value like the preceding number." (*Meyer.*)

32218. *DACTYLIS GLOMERATA* L.

Orchard grass.

From near Widricha, southwestern Siberia.

"(No. 1676a, September 30, 1911.) A coarse grass found in an earth bank. Of value like the preceding number." (*Meyer.*)

32219. *FESTUCA* sp.

From Omsk, Siberia.

"(No. 1677a, July 18, 1911.) Obtained by my interpreter at Omsk, said to come from western Akmolinsk, and not to send up new shoots after having once been plowed under. Possibly of value for forage purposes on dry plains." (*Meyer.*)

32220. *PHELUM PRATENSE* L.

Timothy.

From Omsk, Siberia.

"(No. 1678a, July 18, 1911.) A strain of timothy coming from Kungur, Perm Government, said to be superior to the ordinary kind. Obtained at Omsk by my interpreter. Of value like the preceding number." (*Meyer.*)

32221. *BROMUS INERMIS* Leyss.

Brome-grass.

From Omsk, Siberia.

"(No. 1679a, July 18, 1911.) A coarse grass said to be a good fodder and able to stand much drought. Obtained by my interpreter. Of value like the preceding numbers." (*Meyer.*)

32222. *TRIFOLIUM PRATENSE* L.

Red clover.

From Omsk, Siberia.

"(No. 1680a, July 18, 1911.) A species of clover said to stand much drought. Obtained by my interpreter. Of value like the preceding numbers." (*Meyer.*)

32223. *MALUS* sp.

Crab apple.

From Barnaul, Siberia.

"(No. 1681a, September 5, 1911.) A low-growing variety of Siberian crab apple. The fruits are the size of a plum, of a yellowish color with a red blush. Thrives best on hill slopes facing north; suitable for cold regions." (*Meyer.*)

32224. *PRUNUS FRUTICOSA* Pallas.

Cherry.

From Omsk, Siberia.

"(No. 1682a, August 5, 1911.) The so-called Kurgan cherry, grown quite extensively throughout the Ural district and in western Siberia as a home fruit. The dark-red individual cherries are only as large as good-sized red currants and are sour. However, they make delicious compote and preserves, having a spicy, nutty flavor, and are in great demand for this purpose. In Omsk they are sold during July and August at 4 to 5 rubles (\$2.06 to \$2.57) per pood (36 pounds). These cherry bushes grow from 2 to 4 feet in height, bear glossy dark-green leaves, and stand a remarkable amount of drought, cold, and neglect. A well-kept plantation is very pleasing to the eye and resembles a tea plantation more than anything else. This plant deserves to be given an extensive and thorough trial as a home fruit in the cold and semiarid sections of the United States. Is recommended also as a factor in hybridization experiments to

32175 to 32245—Continued.

32224—Continued.

create a perfectly hardy large-fruited cherry fit to thrive in the upper Mississippi Valley and the regions west of it." (Meyer.)

"*Distribution*.—Eastern Russia and western Siberia from the valley of the Volga to the Altai region.

32225. *PRUNUS FRUTICOSA* Pallas.

Cherry.

From Tomsk, Siberia.

"(No. 1683a, August 25, 1911.) An improved form of the Kurgan cherry. Obtained from Prof. N. F. Kastchenko, of the University of Tomsk. See the preceding number for further remarks." (Meyer.)

32226. *PRUNUS FRUTICOSA* Pallas.

Cherry.

From Tomsk, Siberia.

"(No. 1684a, August 25, 1911.) A large-fruited variety of the Kurgan cherry almost as large as ordinary cherries, flesh blackish red. This introduction deserves extra care. Obtained like the preceding numbers." (Meyer.)

32227. *RIBES DIKUSCHA* Fisch.

Currant.

From Tomsk, Siberia.

"(No. 1685a, August 18, 1911.) The native name of this remarkable currant is *Aldansky vinograd*, meaning Aldan grape, on account of the resemblance of the berries to grapes. It is a black-fruited variety native to the Aldan Mountains in Yakutsk Government. Berries large, bluish black in color, and of sour flavor. They are fine for preserves and are also said to produce a sparkling wine resembling champagne. As the summer is remarkably short in Yakutsk Government and the winter's cold most intense, this currant may be expected to thrive in even the coldest sections of the United States. To be tested in the mountains of New England and in Alaska. Collected in the botanic garden of the University of Tomsk." (Meyer.)

32228. *RIBES DIKUSCHA* Fisch.

Currant.

From Tomsk, Siberia.

"(No. 1686a, August 25, 1911.) Variety *appendiculata*. An improved form of the Yakutsk black currant, being more prolific and bearing larger berries than the type. Obtained from Prof. N. F. Kastchenko of the University of Tomsk, who states that the climate in Tomsk is actually too hot for this remarkable currant. This number should be tested with extreme care." (Meyer.)

32229. *RIBES NIGRUM* L.

Black currant.

From Tomsk, Siberia.

"(No. 1687a, August 18, 1911.) A native Siberian variety of black currant of vigorous growth; fruits large, but not over juicy. Able to stand intense cold and recommended as a home fruit for the cool and somewhat moist sections of the United States. Obtained from the botanical garden of the University of Tomsk, Siberia." (Meyer.)

32230. *RIBES* sp.

Currant.

From near Sminogorsk, southwestern Siberia.

"(No. 1688a, September 24, 1911.) A wild red currant of thrifty growth and able to exist under adverse conditions. Fruits small and sour. This fruit is recommended for testing only in the sections of the United States where red currants do not grow at present." (Meyer.)

32175 to 32245—Continued.

32231. *RUBUS ARCTICUS* L.

Nimbleberry.

From Barnaul, Siberia.

"(No. 1689a, September 5, 1911.) A wild nimbleberry from Finland, called in Swedish *Okerbar*. Said to possess a remarkably delicious fragrance, and is used in small quantities for flavoring compotes and preserves. Obtained from a Finnish family in Barnaul. To be tested in some cool and moist section of the United States, preferably southern Alaska." (Meyer.)

32232. *SOLANUM DULCAMARA* L.

Bittersweet.

From Tomsk, Siberia.

"(No. 1690a, August 24, 1911.) Variety *persicum*. A vigorously growing variety of bittersweet, growing in shrubbery up to a height of over 10 feet. Stands extreme cold and may be used as an ornamental porch and pillar vine. To be tested in the cool and moist sections of the United States." (Meyer.)

32233. *CRATAEGUS SANGUINEA* Pallas.

Hawthorn.

From near Tomsk, Siberia.

"(No. 1691a, August 24, 1911.) An ornamental native Siberian haw, much used in Tomsk as a hedge plant. When left alone this haw develops into a tall shrub and becomes loaded in the fall with masses of orange-red berries, which make these shrubs very ornamental. The berries are often collected by the Russian peasants and after having been boiled with sugar a passable haw butter is made from them. To be tested in the cool and moist sections of the United States." (Meyer)

Distribution.—Throughout Siberia from the Ural Mountains to the region of Lake Baikal.

32234. *COTONEASTER* sp.

From near Sminogorsk, southwestern Siberia.

"(No. 1692a, September 18, 1911.) A cotoneaster growing 2 to 3 feet in height. Occurs on dry stony hill slopes. Possibly of value as a small ornamental shrub in gardens and parks in the cool semiarid sections of the United States." (Meyer.)

32235. *BERBERIS SIBIRICA* Pallas.

Barberry.

From near Sminogorsk, southwestern Siberia.

"(No. 1693a.) A rare low-growing species of barberry, occurring on rocky mountain slopes facing north or northeast. Rarely seen over 1 foot in height. Berries hang solitary and are of coral-red color. Suitable for planting in rockeries and as an ornamental ground cover on rocky places in the colder sections of the United States." (Meyer.)

Distribution.—The Altai Mountain region of southwestern Siberia and northern Mongolia.

32236. *JUNIPERUS SABINA* L.

Juniper.

From near Sminogorsk, southwestern Siberia.

"(No. 1694a, September 24, 1911.) A pretty, dense-growing variety of juniper, found on wind-swept, rocky mountain slopes, facing south or southeast. Often very spreading in habit. Of value like the preceding number." (Meyer.)

32237. *ARTEMISIA* sp.

From near Kalmukski Meesi, southwestern Siberia.

"(No. 1695a, September 15, 1911.) A perennial semiwoody wormwood having gracefully divided light-green foliage and possessing a very attractive, aromatic odor. Grows to a height of 3 to 4 feet and occurs on dry waste places.

32175 to 32245—Continued.

32237—Continued.

Of value as a lining plant along paths and as low hedge material for the cold semiarid sections of the United States." (*Meyer.*)

32238. *HYSSOPUS OFFICINALIS* L.

Hyssop.

From near Ust Kamenogorsk, southwestern Siberia.

"(No. 1696a, October 2, 1911.) Variety *ambigua*. A very aromatic herbaceous perennial growing in rocky cliffs and between stony débris along the Irtysh River. Flowers blue and apparently very rich in honey. Of value as a useful bee plant and as an ornamental perennial for the hardy border. Will probably do especially well in the drier sections of the United States." (*Meyer.*)

32239. *CLEMATIS INTEGRIFOLIA* L.

Clematis.

From near Sminogorsk, southwestern Siberia.

"(No. 1697a, September 18, 1911.) An erect-growing herbaceous clematis, making stems 2 to 4 feet in height and bearing large deep-blue flowers of somewhat roseline form; blooms in June. Occurs between shrubbery or in slightly shaded places where the soil remains damp. Of value as an ornamental hardy perennial for the northern United States and may also be of use as a factor in hybridization experiments in trying to create races of erect-growing large-flowered forms of clematis." (*Meyer.*)

32240. *PAEONIA ANOMALA* L.

Peony.

From Tomsk, Siberia.

"(No. 1698a, August 19, 1911.) A strong-growing wild peony found on well-drained hill slopes, mostly between scrub. Flowers large, of pale-rose color; foliage somewhat coarse. Of interest as a perfectly hardy herbaceous perennial; will thrive in regions with short cool summers and long cold winters." (*Meyer.*)

Distribution.—Throughout central and southern Siberia from the Ural Mountains eastward to the region of Lake Baikal.

32241. *× RHODODENDRON PRAECOX* Davis.

From Tomsk, Siberia.

"(No. 1699a, August 20, 1911.) A rare deciduous shrubby rhododendron, able to stand extreme cold. Obtained from the botanical garden at Tomsk, Siberia." (*Meyer.*)

Considered to be a hybrid between *Rhododendron dauricum* L. and *R. ciliatum* Hook. f.

32242. *GUELLENSTAEDTIA MONOPHYLLA* Fisch.

From Tomsk, Siberia.

"(No. 1700a, August 20, 1911.) A very rare legume, up to the present having been found only in one place in Mongolia and in another spot in southern Siberia, occurring on dry, rocky places. Leaves and flowers small. This plant is of botanical interest only, although it possibly might enter as an item in the flora of very dry pasturing grounds in the western sections of the United States. Obtained like the preceding number." (*Meyer.*)

Distribution.—Dry rocky places in the Altai Mountain region of southwestern Siberia.

32243. *ASPARAGUS OFFICINALIS* L.

Asparagus.

From Chistunka Steppe, southwestern Siberia.

"(No. 1701a, September 8, 1911.) A vigorously growing wild asparagus, found here and there on a dry plain. Seems to be able to withstand more drought and adverse conditions than the ordinary forms of asparagus. To be tested in rustproof breeding experiments." (*Meyer.*)

32175 to 32245—Continued.**32244. CITRULLUS VULGARIS Schrad.****Watermelon.**

From Ust Kamenogorsk, southwestern Siberia.

"(No. 1702a, September 30, 1911.) A watermelon of medium size; rind dark green, quite thin; flesh pale red, of fresh sweet taste; seeds brown. Keeps well and is a good variety in general. Of value possibly in extending the watermelon belt farther north." (*Meyer.*)

32245. CITRULLUS VULGARIS Schrad.**Watermelon.**

From Ust Kamenogorsk, Siberia.

"(No. 1703a, October 1, 1911.) A watermelon of medium size; rind light green, very thin; flesh dark red and very sweet; seeds very small, of brownish black color. Is a good keeper. To be tested like the preceding number." (*Meyer.*)

32247. GOSSYPIUM sp.**Cotton.**

From Addis Abeba, Abyssinia. Presented by Mr. Guy R. Love, American vice consul general, Addis Abeba. Received November 23, 1911.

"Native Abyssinian cotton." (*Love.*)

32248. ANNONA MURICATA L.**Soursop.**

From Camaguey, Cuba. Presented by Mr. Roberto L. Luáces. Received December 5, 1911.

"I have found here in this part of Cuba two trees of *Annona muricata*, growing in primitive woods on the banks of the Caunao River. From fruit of these trees I collected some seed. These seeds are not from cultivated plants escaped from cultivation, for, in the first place, the general mode of carriage of seeds from cultivation to wildness, such as birds, is wanting in this case, for neither birds nor beasts (except man) will eat the *A. muricata*, and, besides, the tree itself and its fruits are very different from what we call the cultivated." (*Luáces.*)

32249 to 32255. CITRUS TRIFOLIATA × AURANTIUM.**Citrange.**

The following plants, propagated by Mr. G. L. Taber, Glen St. Mary Nursery Co., Glen St. Mary, Fla., for distribution by the Office of Crop Physiology and Breeding Investigations, were numbered December 7, 1911.

Seedling plants as follows:

32249. Willits. See No. 13003 for description.

32250. Rustic. See No. 19608 for description.

32251. Savage. See No. 21594 for description.

32252. Norton. "Fruits small and somewhat ribbed, resembling the *Savage* (No. 21594)." (*S. C. Mason.*)

32253. Saunders. "Fruits small, orange yellow, with unusually thick skin. Pulp vesicles rather large, adhering compactly, making the interior of the fruit seem hard and dry as compared to the other citranges. What juice there is is sharply acid and entirely free from the bitter taste so prominent in some of the citranges." (*S. C. Mason.*)

Grafted plants as follows:

32254. Cunningham. "Resembles a miniature *Colman* (No. 19609), having the same fuzzy skin possessed by that citrange." (*S. C. Mason.*)

32255. Sanford.

32256. MANGIFERA INDICA L.**Mango.**

From Chiloane Island, Africa. Presented by Mr. R. H. B. Dickinson, Assistant Director of Agriculture, Beira, Portuguese East Africa. Received December 8, 1911.

"Cuttings taken from a tree said to be 50 or 60 years old, growing near a small Mohammedan temple. It bears large fruits, which may be expected to ripen in January." (*Dickinson.*)

This may possibly be the *Lathrop* mango described under Nos. 9486 and 9669.

32257. (Undetermined.)**Indian cane.**

From Burringbar, New South Wales, Australia. Presented by Mr. B. Harrison. Received July 3, 1911. Numbered December 15, 1911.

"I wish to draw your attention to the value of Indian cane as a heavy yielding fodder plant for dairy or other stock. It is rapidly coming into great favor here and yields from 40 to 100 tons of fodder per acre, while it is said to be superior to any of the sorghum species for resisting drought and frost and is not injurious to stock during any period of its growth. One writer says: 'After some forty years' practical experience in fodder growing I consider this cane miles ahead of anything else I have tried before, the great advantage being that you can cut it as you require it; secondly, the enormous yield. I estimate the yield of my crop at 56½ tons per acre, but the land was manured heavily.' There is a large area of land in many of the States where this cane would thrive well and would without doubt prove of incalculable benefit to many stock owners." (*Harrison.*)

32258. SCOPOLINA JAPONICA (Maxim.) Kuntze.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received December 6, 1911.

Distribution.—A herbaceous perennial found along the banks of streams in the vicinity of Nikko in the province of Tozando, Japan.

32259. GARCINIA TINCTORIA (DC.) W. F. Wight.

From Port Louis, Mauritius. Presented by Mr. G. Regnard. Received December 8, 1911.

Introduced as a possible stock for the mangosteen.

32260 and 32261. NEOGLAZIOVIA spp.

From Bahia, Brazil. Presented by Mr. Omar E. Mueller, American vice consul. Received November 29, 1911.

Plants of the following; quoted notes from Bulletin of the Pan American Union, 1910:

"These fiber plants are of great commercial worth. They grow abundantly in this section, but other than making a few cords for local use nothing is being done with them."

32260. NEOGLAZIOVIA VARIEGATA (Arrudo) Mez.*** Caroá.**

"This is half round, light green, white banded, snakelike, produces an excellent fiber, and flourishes regardless of droughts.

"Mr. Louis Raposo, a Brazilian gentleman resident in Philadelphia, gives the following information concerning this plant:

"Among the new things found growing in the vast wilds of Brazil is a fibrous plant called *caroá*, of which the supply is apparently inexhaustible. The plant is produced from a bulb and is of rapid growth. When stripped at maturity of its fiber it takes but six months under the coaxing influence of the Brazilian sun and soil to reproduce a full-length crop from 6 to 8 feet in length.

32260 and 32261—Continued.**32260—Continued.**

"Mr. Raposo states that shipments of the fiber sent to London and manufactured into rope, as tested by English engineers, show a tensile strength 10 times greater than manila rope of like dimension. As compared with other products from which rope and twine are made, the caroá gives a 10 per cent greater outturn of finished material from the same weight of raw material.

"Tests of caroá rope,' he says, 'for use on shipboard show great wearing quality, as well as other superiorities. The rope does not swell from wetting. In three round trips from London to Bombay the rope gave no appearance of serious damage.

"It takes 20 tons of the green caroá to make 1 ton of the fiber ready for shipment, but a large part of the wastage is said to be suitable for making paper. This if true would give the plant a far more considerable value. The cost of the fiber as rudely produced in Brazil and laid down in London was \$80 per ton. This cost would be largely reduced by economical handling. The discovery of this new fiber, if what is claimed for it be true, is a most important addition to the raw material of manufacture.'" (*Bulletin, Pan American Union, 1910.*)

"This species and the closely related following one occur throughout the arid districts along the Rio Sao Francisco in a climate said to resemble that of our arid Southwest. Mr. Tennant Lee, who saw 2,000 acres of these plants in a wild state and who tested their fiber, says this is one of the finest fibers ever brought into the United States. Ropes made of it will stand salt water longer than manila hemp; it is 28 per cent stronger than manila, yields a larger percentage of fiber than the abacá, and the waste is suitable for paper making." (*Fairchild.*)

32261. NEOGLAZIOVIA CONCOLOR C. H. Wright.**Makimbira.**

"This plant has leaves protected by stout incurved spines upon their edges, thereby rendering the handling both difficult and dangerous."

32262. CASIMIROA SAPOTA Oersted.**Sapota blanco.**

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional. Received August 4, 1911. Numbered December 15, 1911.

32263. ECHIU PININANA Webb and Berth.

From Palma, Canary Islands. Presented by Dr. George V. Perez, Puerto Orotava, Teneriffe, Canary Islands. Received December 8, 1911.

"This is a most striking ornamental plant with a very tall single spike of light-blue flowers. I believe the leaves will turn out to be an excellent forage, better than the prickly comfrey (No. 2152). These seeds are from a wild plant in Palma, where it is native. Try it in southern California or Florida." (*Perez.*)

32264. GARCINIA VENULOSA (Blanco) Choisy.

From the Limay Forest Station, Philippine Islands. Presented by Maj. George P. Ahern, Director of Forestry, Department of the Interior, Manila. Received December 9, 1911.

"The seeds from which these plants were grown were collected in Bataan Province." (*Ahern.*)

Distribution.—A tree found in the Philippines.

32265 and 32266. Cicer ARIETINUM L.**Chick-pea.**

From Chihuahua, Mexico. Presented by Mr. Marion Letcher, American consul.
Received October 9, 1911.

Seeds of the following:

32265. "*Garbanzo grande*."

32266. "*Garbanzo chico*."

32267. DIOSPYROS KAKI L. f.**Persimmon.**

From Fayetteville, N. C. Presented by Mr. J. S. Breece. Received October, 1911.

"Seeds taken from a Tamopan persimmon, grown by Mr. Breece under No. 17172. The other fruits received at the same time were seedless and it is thought that the seeds in the single specimen were the result of accidental cross-pollination." (*Fairchild*.)

The fruit from which these seeds were taken is identical with Mr. Frank N. Meyer's description of No. 16921, and it is thought that there may have been some mistake made in sending it out under No. 17172.

32268 to 32271. ASPARAGUS spp.**Asparagus.**

From South Africa. Presented by Sir Percy Fitzpatrick, Johannesburg, Transvaal, South Africa. Received December 6, 1911.

Seeds of the following; quoted notes by Sir Percy Fitzpatrick:

32268 to 32270. *ASPARAGUS OFFICINALIS* L.

32268. "From Harrismith, Orange Free State."

32269. "From cultivated plants, Johannesburg."

32270. "From cultivated plants near Johannesburg."

32271. *ASPARAGUS* sp.

"Seed gathered on slopes of Table Mountain from wild plants in native bush forest. This asparagus is a great delicacy and to my taste is better than any of the cultivated kinds. Table Mountain, near Cape Town, is 1,000 miles away. The asparagus is gathered by colored people, who are jealous of the monopoly and most ignorant of methods of seed collecting. I got some seed in March last, but the berries were quite green in color. I know that our wild asparagus (which is here known as *Wach-een-beetze*, or Wait-a-bit, on account of its hooked thorns) ripens red, as do the others. I tried again during all April, but the 'children of the sun' smilingly replied that I was mistaken and that the green berries were quite ripe."

32272 to 32277.

From Darmstadt, Germany. Presented by Prof. William R. Lazenby, of the Ohio State University, Columbus, Ohio. Received November 23, 1911.

Seeds of the following; quoted notes by Mr. Lazenby:

32272. *LYCIUM BARBARUM* L.

"This is used very largely here as a hedge plant around yards and small orchards. It grows so dense that rabbits can not get through it. I am told it is easily pruned and kept within bounds. It is also planted on sandy railroad embankments to bind the soil and prevent washing or sliding."

Distribution.—A shrub found in southwestern Asia from Mesopotamia eastward through Persia to the Punjab region of northern India.

32272 to 32277—Continued.**32273.** *ROSA* sp.**Rose.**

"A rose used for the same purpose as the preceding number. The fruits or hips of this rose are very ornamental. It grows along the edges of the forest. I have no idea what the flower is, but the plant seems to have merit. May be useful for breeding purposes."

32274. *EUONYMUS* sp.

"A fruitful and beautiful *Euonymus*."

32275. *VIBURNUM* sp.

"A strong-growing variety."

32276. *PRUNUS* sp.

"This seems to have merit as a hedge plant."

32277. *PTELEA* sp.

"A *Ptelea* whose large-winged seeds are quite attractive. It seems to be of much more vigorous growth than our common *Ptelea trifoliata*."

32278. *BELOU MARMELOS* (L.) Lyons.**Bael.**

From Zafarwal, India. Presented by Mr. H. S. Nesbitt, American Mission. Received July 20, 1911. Numbered December 14, 1911.

"This bael is used in India as an astringent curative of dysentery, etc." (*Nesbitt.*)

See No. 24450 for further description.

32280 and 32281.

From Yengi Malah, Tien Shan Mountains, Chinese Turkestan. Collected by Mr. F. N. Meyer, agricultural explorer, Bureau of Plant Industry. Received November 3, 1911.

Seeds of the following; picked out of No. 32042. See that number for remarks.

32280. *AVENA SATIVA* L.**Oat.****32281.** *HORDEUM* sp.**Barley.****32282.** *ANNONA DIVERSIFOLIA* Safford. **Ilama, or anona blanca.**

From Salvador, Central America. Presented by Don Rafael B. Castillo, Director General of Agriculture, through Mr. W. E. Safford. Received December 12, 1911.

Seeds.

32283 to 32294.

From Manila, Philippine Islands. Presented by Mr. E. D. Merrill, Bureau of Science. Received November 11, 1911. Numbered December 15, 1911.

Seeds of the following:

32283. *PAHUDIA RHOMBOIDEA* (Blanco) Prain.

See No. 31586 for description.

32284. *PARKIA TIMORIANA* Merrill.**32285.** *PITHECOLOBIUM ACLE* (Blanco) Vidal.**32286.** *PHYTOCRENE BLANCOI* Merrill.**32287.** *PANDANUS LUZONENSIS* Merrill.

Distribution.—A treelike species reaching a height of 25 feet, found in the valley of the Lamao River in the island of Luzon in the Philippines.

32283 to 32294—Continued.

32288. *MUCUNA* sp.32289. *BARRINGTONIA* sp. (?)32290. *TERMINALIA OVOCARPA* Merrill.

Distribution.—A large tree growing at an elevation of 300 to 400 feet in the dry hill forests in the island of Luzon, in the Philippines.

32291. *KNEMA HETEROPHYLLA* (Vill.) Warburg. (?)

Distribution.—A tall tree found on the islands of Luzon, Panay, Mindanao, and Sulu in the Philippines.

32292. *CARYOTA CUMINGII* Lodd.

Distribution.—Known only from the Philippines.

32293. *DRACONTOMELON EDULE* (Blanco) Skeels.

Lamio.

(*Paliurus edulis* Blanco, 1837, *Flora de Filipinas*, p. 174.)

The seeds of this Philippine tree, which belongs to the family Anacardiaceæ, were received under the name *Dracontomelon cumingianum*. This name is attributed in the *Index Kewensis* to Baillon (*Bulletin de la Société Linnéenne de Paris*, vol. 1, 1877, p. 122), who, although he did not use the binomial credited to him, cited *Adansonia*, vol. 10, 1872, p. 329, where the genus *Comeurya* is characterized and one species, *C. cumingiana*, is listed. Merrill (*A Review of the Identifications of the Species Described in Blanco's Flora de Filipinas*, 1905, p. 36) has identified *Paliurus edulis* Blanco as being, for the most part, the same as *Dracontomelon cumingianum* Baillon. Blanco's specific name, being earlier, is here restored.

32294. *CHALCAS CRENULATA* (Turcz.) Mueller.

Distribution.—A shrub or small tree found in the Philippines and in Queensland, Australia.

32295. *COFFEA ARABICA* L.

Coffee.

Grown not far from the town of Villeta, at an altitude of 3,000 feet, in the province of Cundinamarca, Colombia. Presented by Mr. Arthur Hugh Frazier, Chargé d'Affaires ad Interim, American Legation, Bogota. Received November 29, 1911.

"Actually no coffee is grown at or near Bogota, the altitude being much too high for the plant. The so-called Bogota coffee is grown at altitudes varying from 3,000 to 6,000 feet and, roughly speaking, is confined to the Department of Cundinamarca, although in the trade the coffees of Antioquia and Santander are sometimes confused with the product of Cundinamarca." (*Frazier.*)

32296 and 32297.

From Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional. Received December 18, 1911.

Seeds of the following:

32296. *LUCUMA* sp.

Seed small, roundish.

32297. *ACHRAS ZAPOTA* L.

Mamee sapota.

32298 to 32301. ANNONA CHERIMOLA Miller.**Cherimoya.**

From Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional, San Jose.
Received December 9, 1911.

Seeds of the following; quoted notes by Mr. Wercklé:

32298. "Fruit medium to large, round, with well-marked mottling only or a slight depression in upper part of carpel; green with a brownish gray tinge. Highest quality, less seeds than any other I have seen (eight in a good-sized fruit). The fruit from which these seeds were taken was quite distinct in form, very plump and thick, short, hardly tapering, not compressed, medium sized, brownish black."

32299. "Fruit medium to large, similar to the preceding number, but without the brownish gray tinge, not inferior to it, but more seedy (still few seeds). Seeds of common shape and color."

32300.

"Fruit large, cordiform ovate, completely even, with no depressions at all in the carpels and netting; i. e., the edge of carpels or rather the division lines of the carpels not noticeable, except in a very few places. Color yellowish green to greenish yellow, suffused with a very light brownish tinge; on the sun side the color passes to greenish orange, which is very rare in this species. In many places the skin is a little russety. Seeds few; black, long, and narrow. Quality the highest."

32301.

"Quite a good annona from San Pedro."

32302. ANNONA MURICATA L.**Soursop.**

From Camaguey, Cuba. Presented by Mr. Roberto L. Luáces. Received December 18, 1911.

"Seeds from a cultivated tree with sweet fruits." (*Luáces.*)

32303 to 32308.

From near Saratoff, southeastern Russia. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, December 19, 1911.

The following material:

32303. MALUS sp.**Apple.**

"(No. 991, November 23, 1911.) A wild apple of shrubby growth occurring on dry, well-drained hills, in company with such shrubs as *Acer tataricum*, *Rhamnus cathartica*, *Prunus spinosa*, *Spiraea crenifolia*, etc. Of value possibly in breeding work." (*Meyer.*)

32304. SALIX sp.**Willow.**

"(No. 992, November 23, 1911.) A medium-sized willow of slightly drooping habits. The young branches are of a shiny brown color, while the trunk and heavy branches assume a grayish green color. Occurring on rather dry places. Of value as an ornamental park and garden tree in those semiarid sections of the United States where the summers are hot and the winters cold." (*Meyer.*)

32305. CORONILLA VARIA L. (?)

"(No. 993, November 23, 1911.) A legume found on dry hill slopes and in loess ravines. Apparently very drought resistant. Of possible value as a forage and pasture plant for the drier sections of the United States." (*Meyer.*)

32303 to 32308—Continued.

32306. *MEDICAGO* sp.

“(No. 994, November 23, 1911.) A wild alfalfa of erect growth occurring on stony places. May possibly be *Medicago caerulea*.”

32307. *HEDYSARUM GRANDIFLORUM* Pallas (?).

“(No. 995, November 24, 1911.) This plant occurs on hill slopes which are mainly composed of limestone. It is of low growth and may possibly possess value as a pasturing plant in semiarid regions; also as an ornamental garden perennial. See Nos. 1645a to 1647a (Nos. 32187 to 32189) for further remarks.” (Meyer.)

32308. *PYRUS COMMUNIS* L.

Pear.

“(No. 996, November 24, 1911.) A wild pear of shrubby growth, growing on dry, pebbly hill slopes in company with *Prunus spinosa*, *Crataegus sanguinea*, etc. Possibly of value in breeding experiments.” (Meyer.)

32309. *LAGERSTROEMIA SPECIOSA* (L.) Pers.

From Lamao, Bataan, Philippine Islands. Presented by Mr. O. B. Burrell, superintendent, Lamao Experiment Station, Bureau of Agriculture. Received December 20, 1911.

Distribution.—A tall tree found from northwestern India, where it is cultivated, southward and eastward to China and the Malay Archipelago.

32310. *ASPARAGUS FILICINUS* Hamilton.

Asparagus.

From Sibpur, near Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received December 18, 1911.

32311 to 32315.

From Dehra Dun, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanic Gardens, United Provinces, Seharunpur. Received December 18, 1911.

Seeds of the following:

32311. *ALYSICARPUS VAGINALIS* (L.) DC.

“Variety No. 2.”

32312. *ALYSICARPUS RUGOSUS* (Willd.) DC

“Variety No. 1. Narrow leaved.”

32313. *CASSIA MIMOSOIDES* L.32314. *ZORNIA DIPHYLLA* (L.) Persoon.

Distribution.—On the plains of India and cosmopolitan throughout the Tropics.

32315. *ANDROPOGON MONTICOLA* Schultes.

Distribution.—On the slopes of the Himalayas in northern India, where it ascends to an elevation of 6,000 feet, and southward to Ceylon and Burma.

32316 and 32317.

From India. Procured by Mr. R. S. Woglum, Bureau of Entomology, United States Department of Agriculture. Received December 12, 1911.

Seeds of the following:

32316. CASSIA FISTULA L.

"A large tree with very pretty, yellow flowers. Seed pods cylindrical, 1 to 1½ feet long, ¾ inches in diameter. My boy says that the natives use the partitions between the seeds to steep into tea which is used for fever, etc. Seeds are not used." (*Woglum.*)

See No. 29182 for previous introduction.

32317. CHALCAS PANICULATA L.

See No. 25350 for previous introduction.

32318 and 32319.

From Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional, San Jose. Received December 26, 1911.

The following material; quoted notes by Mr. Wercklé:

32318. MUSA sp.

"*Banana-guinea*, intermediate between the banana and the guinea; better than the banana. From the Coyalar."

32319. ANNONA sp.

"*Anona de San Francisco*. Bears the second or third year; highest quality; stands the climate of the coast perfectly. Takes as splice graft on anona, guanávana, and soncoya."

See Nos. 31574 to 31576 for previous introduction of this variety.

32322. ANNONA sp.

From Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional, San Jose. Received December 26, 1911.

"Mixed lot of seed of some very good varieties of anonas." (*Wercklé.*)

32323. CASTANEA SATIVA Miller.

Chestnut.

From Kutien, Fukien, China. Presented by Dr. T. H. Coole. Received December 22, 1911.

32324. ARALIA CORDATA Thunb.

Udo.

From Sapporo, Japan. Presented by Mr. Y. Takahashi, botanist and vegetable pathologist, Hokkaido Agricultural Experiment Station. Received December 28, 1911.

"Roots of a good cultivated strain of native udo." (*Takahashi.*)

32325. FICUS RIGO F. M. Bailey.

From Barodobo, Kapa Kapa, Papua. Presented by Mr. A. C. English. Received September 27, 1911. Numbered December 15, 1911.

"A good rubber-producing tree, hardy and will grow well in our dry belt here. The rubber from this tree is on a par with Para rubber. I have not yet been able to get the seed to germinate. I started my plantation with plants of this species obtained from the scrubs growing as a parasite on other trees, the seed being carried by birds and animals, and after passing through the bowels, it then germinates in the forks of trees and in decomposed timber. It readily strikes from cuttings and it appears to be free from all diseases." (*English.*)

Distribution.—The Rigo district of southeastern British New Guinea.

32326. ANDROPOGON sp.**Lemon grass.**

From Tampico, Mexico. Presented by Mr. Clarence A. Miller, American consul.
Received November 22, 1911. Numbered December 30, 1911.

"*Zacate Limon*. This is said to be a domestic plant. Each stalk should be separated, as it grows up like a multiplying onion and bears no seed. Each stalk with ordinary care usually produces a bunch about the size of a dish pan in a year. By many the leaves or blades are picked fresh. The leaves are then steeped and the resulting tea is used as a table beverage. This grass is very plentiful in this section." (Miller.)

32327 and 32328.

From Rome, Italy. Presented by Dr. Gustav Eisen, California Academy of Sciences, San Francisco, Cal. Received December 26, 1911.

Seeds of the following; quoted notes by Dr. Eisen:

32327. PHOENIX DACTYLIFERA L.**Date.**

"*Zagloul*. The very best date that I have eaten anywhere. It is very large, in fact the largest date I have seen. Medium dark-brown, sweet, and remarkably tender flesh. Said to come from Fayum, but the dates were bought in Cairo. Ripe in January and lasts fresh until April. Best in March and February. Said to be the best date in Egypt."

32328. PRUNUS DOMESTICA L.**Plum.**

"*Papagone*. The finest plum I have eaten in any country: Native of the campagna around Naples, especially Boscotrecase and other towns around Vesuvius. About 3 inches long, greenish yellow, oblong, with a remarkably long, thin, and slender stone compared to the size of the fruit. The quality of this plum can not be too highly praised. Have not seen it in any other part of Europe, nor in California."

32329 to 32347.

From Buitenzorg, Java. Presented by the Director of Agriculture, at the request of Mr. C. V. Piper. Received November 2, 1911.

Seeds of the following; quoted notes by Mr. Piper:

32329. ARUNDINELLA sp.

"A rather coarse but leafy species and probably valuable for green feeding."

32330. AXONOPUS COMPRESSUS (Swartz) Beauv.

"A carpet grass."

Distribution.—Jamaica and other islands of the West Indies; naturalized in the Tropics.

32331. BRADBURYA PUBESCENS (Benth.) Kuntze.

"A twining legume forming a dense mass 6 feet tall when supported."

Distribution.—In southern Mexico, from the vicinity of Vera Cruz and Orizaba southward, through tropical South America, and in the West Indies.

32332. BOTOR PALUSTRIS (Desv.) Kuntze.

"Grown in the Buitenzorg Botanic Garden under the name of *Psophocarpus robustus*. A climbing vine much larger and more vigorous than the ordinary Goa bean."

Distribution.—Considered to be a native of Africa; generally cultivated in the Tropics.

32329 to 32347—Continued.

32333. *CASSIA ROTUNDIFOLIA* Pers.

"A low-growing legume having much the same habit as *Lotus corniculatus*. It produces seed in abundance."

Distribution.—From the region of Orizaba in southern Mexico southward to Uruguay.

32334. *CRACCA VILLOSA ARGENTEA* (Lam.) Kuntze.

"An open bushy species growing 3 feet high. This seed shatters easily."

Distribution.—On the plains of India from the Himalayas to Ceylon.

32335. *DOLICHOLUS MINIMUS* (L.) Medic.

"A slender vine climbing to a height of 12 or 15 feet in the trees. In cultivated ground it often makes a dense covering a foot or more deep and is inclined to be somewhat weedy."

Distribution.—Throughout the plains of India and generally distributed in the Tropics.

32336. *DRACONTOMELON DAO* (Blanco) Merrill and Rolfe.

Dao.

Distribution.—A tree found on the islands of Luzon and Mindoro in the Philippines.

32337. *ERAGROSTIS* sp.32338. *MEIBOMIA* sp.

"A species having much the same habit as the Florida beggarweed and perhaps of equal value."

32339. *PANICUM ARGENTEUM* R. Brown.

Distribution.—On the islands in the Gulf of Carpentaria on the northern coast of Australia.

32340. *PANICUM RADICANS* Retz.

Distribution. Throughout India and eastward to tropical China and the Malayan and Polynesian Islands.

32341. *PASPALUM CONJUGATUM* Berg.

"This species is called *Carabao* grass in the Philippines, and *Bitter* grass in Java. It forms a vigorous, often pure, growth in low-lying lands, and also grows abundantly in dense shade. Stock are not very fond of it."

Distribution.—From San Luis Potosi in northern Mexico southward to Brazil; also in tropical Africa and Asia.

32342. *PHASEOLUS SUBLOBATUS* Wall.

"A twining species with slender stems."

Distribution.—Found on the estuary of the Irrawaddy River in southern Burma, India.

32343. *SYNTHESISMA CILIARIS* (Retz.) Schrad.32344. *TRICHOLAENA ROSEA* Nees.

"A grass very closely resembling tall grass and possibly identical."

32345. *TRICHOLAENA ROSEA* Nees.

See previous number for description.

32346. *VIGNA* sp. (?)

"An annual legume with the habit of the cowpea, but less vigorous in growth and the stems more slender and twining."

32329 to 32347—Continued.**32347.** (Undetermined.)

"A coarse species with the general appearance of Para grass, but the stems are erect."

32348 to 32350. PRUNUS ARMENIACA L.**Apricot.**

From Imperial Estate "Murgab," Bairam Ali, Oasis of Merv, Russian Turkestan. Collected by Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, November, 1911. Received December 29, 1911.

Cuttings of the following; quoted notes by Mr. Meyer:

32348. "(No. 1001.) A native central Asian variety of apricot, called *Murgab*. Said to be of fine qualities."

32349. "(No. 1003.) A native central Asian variety of apricot, called *Abutalibe*. Said to be of fine qualities."

32350. "(No. 1004.) A native central Asian variety of apricot, called *Acha-djanowood*. Said to be of fine qualities."

32351. BLIGHIA SAPIDA Koenig.**Akee.**

From Jamaica, British West Indies. Presented by Mr. W. Harris, superintendent, Hope Botanic Gardens, Kingston. Received December 29, 1911.

See No. 24592 for description.

Seeds.

32352. QUERCUS SUBER L.**Cork oak**

From Algeciras, Spain. Procured through Mr. R. L. Sprague, American consul, Gibraltar, Spain. Received December 29, 1911.

32353 to 32358.

From Mexico. Presented by Dr. C. A. Purpus, Zacuapam, Huatusco, Vera Cruz. Received December 26, 1911.

Seeds of the following; quoted notes by Dr. Purpus:

32353. *NICOTIANA* sp.

Tobacco.

"From Tehuacan, Puebla. Altitude 1,000 meters [3,280 feet]."

32354. *PINUS MONTEZUMAE* RUDIS (Endl.) Shaw.

Pine.

"From Esperanza. Altitude 2,700 to 2,800 meters [8,800 to 9,100 feet]."

Distribution.—From the southern part of the province of Chihuahua, in central Mexico, southeastward to Central America.

32355. *PINUS LEIOPHYLLA* Schlecht. and Cham.

Pine.

"From Amecameca. Altitude 2,500 to 2,600 meters [8,200 to 8,500 feet]."

Distribution.—Subtropical and warm temperate altitudes from the province of Zacatecas southeastward to the province of Oaxaca in Mexico.

32356. *PINUS PATULA* Schlecht. and Cham.

Pine.

"From Boca del Monte, Puebla. Altitude 2,100 meters [6,900 feet]."

Distribution.—Warm temperate altitudes in the provinces of Hidalgo, Puebla, and Vera Cruz, in Mexico.

32353 to 32358—Continued.**32357. PINUS PSEUDOSTROBUS** Lindl.**Pine.**

"From Zacuapam, Huatusco."

Distribution.—From the province of Vera Cruz, in southern Mexico, south-eastward to Nicaragua.**32358. SOLANUM NIGRUM** L.**Nightshade.**

"From Zacuapam, Vera Cruz. Altitude, 3,000 feet."

32359. COFFEA LAURENTII Wildem.**Coffee.**

From Kingston, Jamaica. Presented by Mr. William Harris, superintendent, Hope Botanic Gardens. Received December 30, 1911.

Procured for experimental growing in Arizona, southern California, and Florida.

32360. MALUS sp.**Crab apple.**

From Jamaica Plain, Mass. Presented by Mr. Charles W. Livermore, Brookline, Mass. Received December, 1911.

"Seeds from an excellent crab apple. The tree from which these came is very hardy and bears abundantly. The apples are so generally superior that I hope you will be able to test the seeds at some station for the benefit of the Pacific coast." (*Livermore.*)**32361 to 32366.**

From China. Presented by Mr. Nathaniel Gist Gee, Soochow University, Soochow. Received December 30, 1911.

Seeds of the following; quoted notes by Mr. Gist Gee:

32361. GLYCINE HISPIDA (Moench) Maxim.**Soy bean.**

Olive green. "From Soochow. Hairy green beans planted in second or third month. Eaten green or dried."

32362. VIGNA SINENSIS (Torner) Savi.**Cowpea.**Black. "*Kaung doen.* About the same as red beans."**32363. PHASEOLUS RADIATUS** L.

"Small green beans planted in the fifth moon, ready to harvest in two months. Eaten only after being dried."

32364. PHASEOLUS ANGULARIS (Willd.) W. F. Wight.

"Red beans planted the third or fourth month. Ready to eat in eight months. Dried before eating."

32365. CASTANEA SATIVA Miller.**Chestnut.**

"Large chestnut from Dong Ding Mountain, near Soochow."

32366. CASTANOPSIS sp.

"From Tientsin."

32367 and 32368. HORDEUM spp.**Barley.**

From Transvaal, South Africa. Presented by Prof. J. Burt Davy, agrostologist and botanist, Department of Agriculture, Pretoria. Received December 26, 1911.

Seeds of the following:

32367. HORDEUM VULGARE HIMALAYENSE Rittig.**32368. HORDEUM VULGARE CORNUTUM** SCHRADER.**Awnless barley.**

BOTANICAL NOTES AND PUBLICATION OF NEW NAMES.

32006. DIMOCARPUS LONGAN Loureiro.

32036 and 32037. LANGUAS GALANGA (L.) Stuntz.

32090. LEUCADENDRON MELLIFERUM (Thunb.) W. F. Wight.

This South African proteaceous shrub has been listed in previous issues of the Inventories as *Protea mellifera* Thunberg (Dissertatio botanica de Protea, 1781, p. 34). In establishing the genus *Protea* (Species Plantarum, 1753, p. 94) Linnaeus published but two species, *P. argentea* and *P. fusca*. Both of these have since been referred to the genus *Leucadendron* of Berg (Handl. Vet. Akad. Stockholm, 1766, p. 325), which, however, is not the *Leucadendron* of Linnaeus (Species Plantarum, 1753, p. 91), the type of which is *L. lepidocarpodendron*. In his Mantissa (vol. 2, 1771, p. 189) Linnaeus, however, changed his conception of the genus *Protea* to include his *Leucadendron lepidocarpodendron*. This has resulted in the confusion and ultimate exact exchange of name between the two genera *Protea* and *Leucadendron*. Since the plant under discussion is congeneric with *Leucadendron lepidocarpodendron* and not with *Protea argentea*, the type of the genus *Protea*, it is necessary to retain it in the Linnaean genus *Leucadendron*. This was recognized in 1911 by Mr. W. F. Wight, who in the revised edition of the Century Dictionary, vol. 5, p. 3422, under "*Leucadendron*," published the name *Leucadendron melliferum*, based on *Protea mellifera* Thunberg.

32104. BENINCASA HISPIDA (Thunb.) Cogniaux.

32118. SYNTERISMA DEBILIS (Desf.) Skeels.

32120. SYNTERISMA LONGIFLORA (Retz.) Skeels.

32194. LENTILLA LENS (L.) W. F. Wight.

32293. DRACONTOMELON EDULE (Blanco) Skeels.

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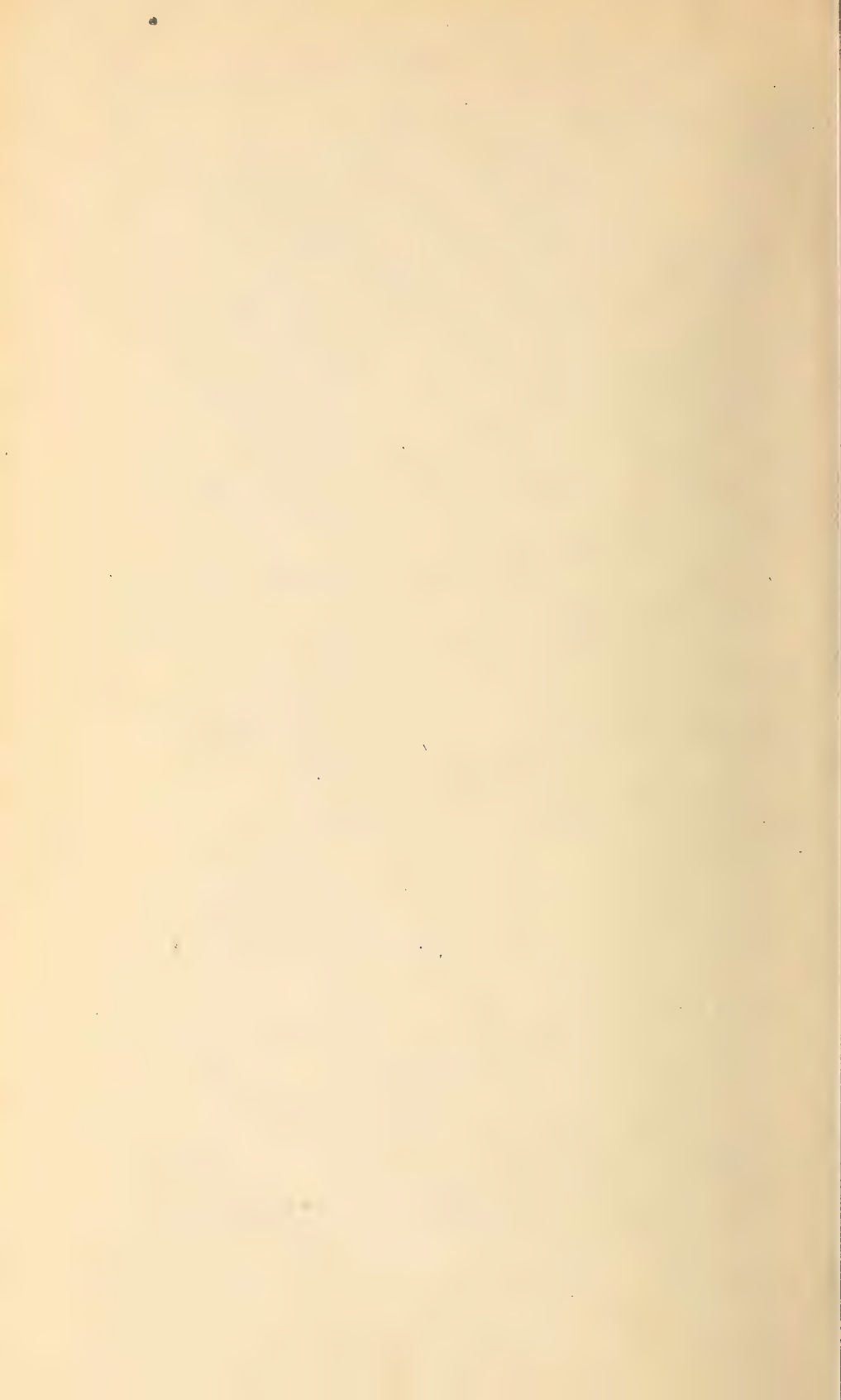
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WILLIAM A. TAYLOR, *Chief of Bureau.*

Mr. Harlan

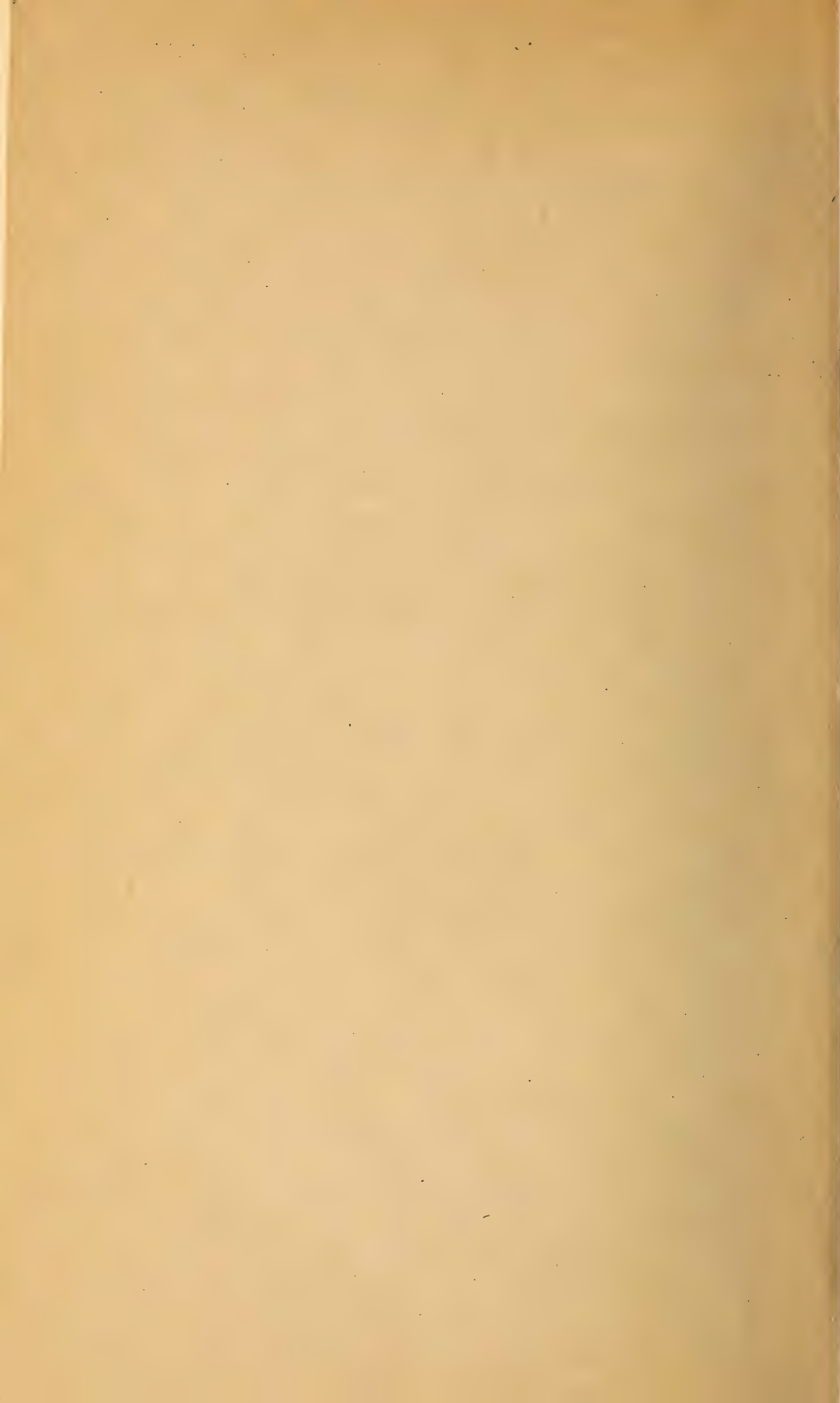
SEEDS AND PLANTS IMPORTED

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TO MARCH 31, 1912:

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Assistant Chief of Bureau, L. C. CORBETT.

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U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF THE CHIEF,
Washington, D. C., December 13, 1912.

SIR: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 282 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from January 1 to March 31, 1912: Inventory No. 30; Nos. 32369 to 33278."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

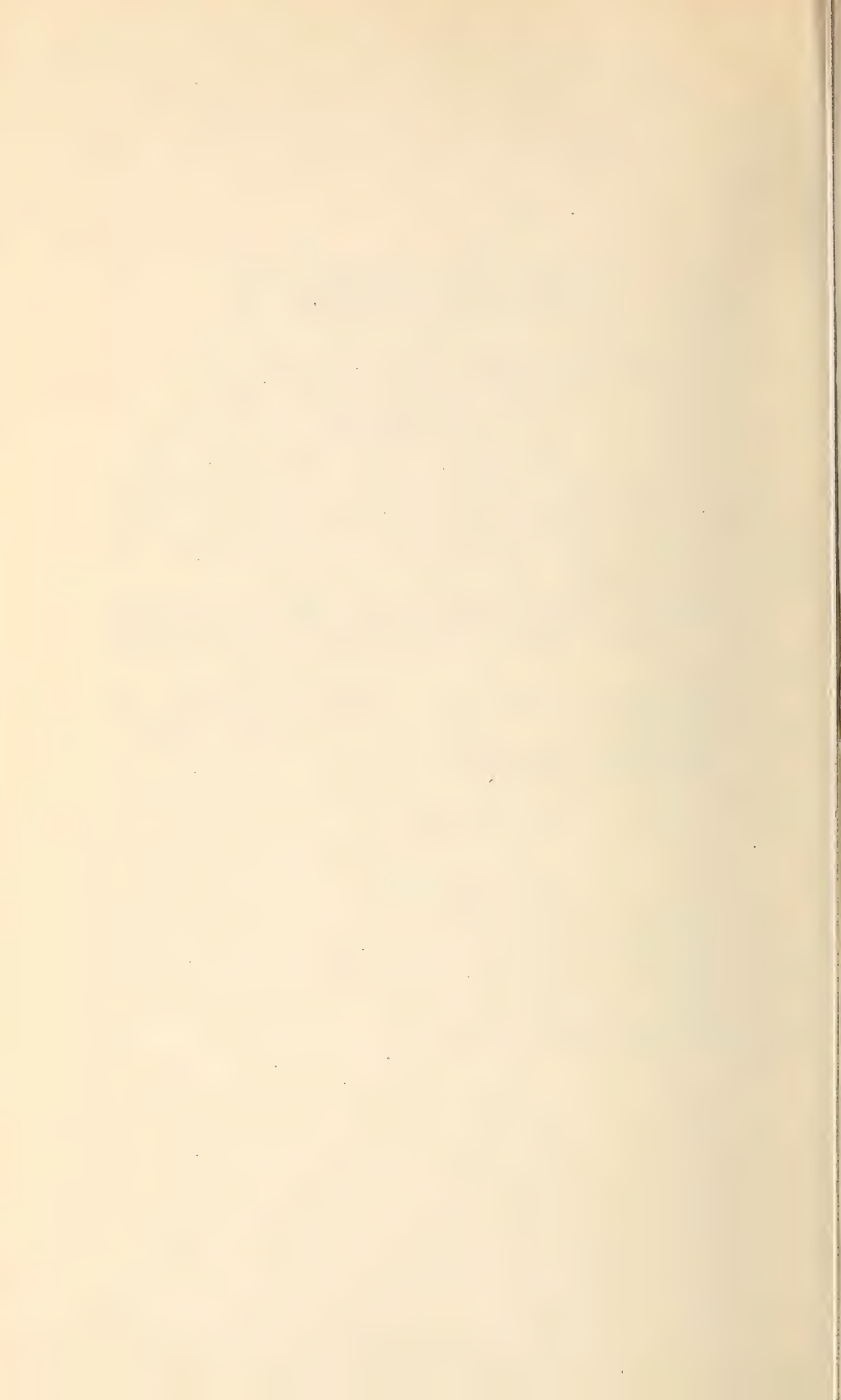
Respectfully,

B. T. GALLOWAY,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.

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SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM JANUARY 1 TO MARCH 31, 1912: INVENTORY NO. 30; NOS. 32369 TO 33278.

INTRODUCTORY STATEMENT.

This number of the inventories contains some material of rather unusual interest. It lists part of the collections made by Mr. Frank N. Meyer during his late expedition into Chinese Turkestan, covering particularly the material secured by him from the noted Russian plant breeder, Mr. I. V. Mijurin. It also contains notes regarding some promising forage grasses collected by Mr. C. V. Piper, Agrostologist in Charge of the Office of Forage-Crop Investigations, during his preliminary exploration of India in search of forage grasses particularly adapted to our Southern States, and it also describes a number of Spanish fruit varieties that Mr. Walter T. Swingle, of the Office of Crop Physiology and Breeding Investigations, discovered during his recent trip to Spain, which was made by him in company with Dr. L. Trabut, the veteran plant breeder and horticulturist of Algeria.

In the spring of 1903 Mr. G. Onderdonk, one of the veteran nurserymen of southern Texas, made a trip into Mexico for the purpose of securing varieties of Mexican peaches and apricots which he knew existed in the mountainous regions of the central provinces. A collection of these fruits which he made was planted at San Antonio, Tex., and Nos. 32372 to 32380 of this present inventory are selected seedlings from the trees grown as a result of this expedition. They are said to be late-ripening sorts, resembling somewhat the Honey peach, but are later in ripening. These may prove of unusual value for the southern peach belt.

Of Mr. Meyer's collection the seeds and plants most worthy of notice are as follows: No. 32389, seeds of *Medicago falcata*, which in Mr. Meyer's opinion (and in this he agrees with Prof. N. E. Hansen) is likely to prove of especial value in those situations where the crowns of the plants are damaged by close grazing and by the hoofs of animals; No. 32408 is a variety of *Medicago sativa* selected by Mr. Bogdan at Krassny Koot, one of the best of his hybrids; No. 32416,

the noted Sarepta mustard, which should be called to the attention of mustard growers in this country because of its unusual strength when grown on rich soil in a hot, dry climate; No. 32417, a wild apple from near Sarepta, of possible value as a drought-resistant shrub or medium-sized tree for breeding purposes or for cultivation in the arid Southwest; No. 32424, a hybrid plum (*Prunus spinosa* × *Prunus domestica*), one of Mr. Mijurin's hybrids; No. 32662, a cross between *Amygdalus davidiana* and *Amygdalus nana*, two very hardy types hybridized by Mr. Mijurin and producing a very floriferous, ornamental, hardy form; Nos. 32664 and 32665, two varieties of *Prunus fruticosa* by the same hybridizer; No. 32667, a golden currant by the same breeder from the region of Kozlov, noted for its severe winter climate; No. 32668, a hybrid rose of exceptional hardiness, representing *Rosa spinosissima* and *Rosa rugosa*, by the same hybridizer; Nos. 32669 to 32673, five hybrid plums suited particularly for the colder sections of the country, being hybrids of *Prunus spinosa* and *Prunus domestica*; No. 32674, a remarkable cherry, a variety of *Prunus avium*, originated by Mr. Mijurin and named "Queen of the North," which is considered by Russian horticulturists to be a decided acquisition to hardy fruit trees, growing as it does where other cherries do very poorly; Nos. 32675 and 32676, two of Mr. Mijurin's quinces, which are presumably withstanding a winter temperature of -35° C. (-31° F.) and have succeeded at Kozlov when other varieties have been killed; Nos. 32757 and 32758, two forms of an east Siberian wild plum (*Prunus ussuriensis*) from Souchodole, Russia, the fruits of one of which are said to improve in flavor by being frozen; No. 32762, *Ribes procumbens*, from the Altai Mountains, a species of large-fruited currant which Mr. Meyer recommends for trial in Alaska; No. 32763, *Clematis tangutica*, a yellow-flowered climbing clematis which Mr. Mijurin reports having received from Tibet; No. 32764, a remarkable, new yellow lily, the bulbs of which are reported to weigh as much as 6 pounds apiece, another of Mr. Mijurin's originations; No. 32829, *Ulmus densa*, an ornamental elm capable of standing great heat and a considerable amount of alkali, collected by Mr. Meyer in the oasis of Merv, Russian Turkestan; No. 32831, another species of elm which will probably make a good shade and avenue tree in Texas, Arizona, and New Mexico; Nos. 32832 to 32836, five varieties of apricot from the oasis of Merv; No. 33077, seeds of *Larix sibirica*, from the Altai Mountains, one of the most rapid-growing conifers, capable of withstanding our northern climate; No. 33078, a Siberian spruce (*Picea obovata*); and No. 33079, seeds of the Siberian pine (*Pinus cembra*).

Mr. Piper's collections in India include the following interesting possibilities: No. 32430, *Rytidix granularis*, an annual grass after the

character of the crab-grass and of possible value for the same purposes, from Kirki, India; No. 32436, *Heylandia latebrosa*, from Kirki, a prostrate legume abundant in the Dekkan and said to be a good forage species; No. 32440, *Andropogon caricosus*, one of the hay-producing grasses of central India, considered as excellent forage, from Kirki, India; Nos. 32443 to 32448, 6 species of forage grasses from the Nilgiri Hills (which have a climate similar to that of the coastal region of California), among them being included the most nutritious grasses for hay and pasture known in southern India; Nos. 32491 to 32598, 108 varieties of soy beans from different parts of India; Nos. 32450 and 32453, 2 species of Indian raspberries from the Nilgiri Hills, considered by Mr. Piper as promising for the Southern States; Nos. 32777 and 32778, 2 subspecies of *Cracca villosa* that are being tested in Java as green-manure crops; Nos. 32431 and 32782, *Indigofera linifolia*, from India, where it is considered one of the very best native pasture legumes, promising for southern California; Nos. 32799 and 32800, two species of wild persimmons from Seharunpur for the persimmon breeders of the Southern States; No. 32808, a new shade tree, *Gmelina arborea*, grown in the upper Ganges Valley and likely to succeed well in southern California; No. 32454, seeds from an unusually good cherimoya, produced by trees descended from the original introduction of this fruit made by Markham into India from Peru; and No. 32429, one of the best pasture grasses in India, *Brachiaria eruciformis*, which forms dense masses of fine stems and appears to be a good seeder.

Dr. Gustav Eisen, of the California Academy of Sciences, during his work for the academy in Spain, called attention to a number of varieties of fruits which have been secured through the British vice consul at Granada. These should recommend themselves especially to Californians as being selected by one familiar with California conditions. Dr. Eisen's studies have convinced him that some of the most valuable California fruit varieties, such as the mission fig, came from the region of Granada and were introduced into California in the early days by the Spanish padres. Among the fruit varieties which he believes are new to California are the Isabella fig (No. 32878), one of the best varieties he has ever tasted; No. 32879, the Jeresiana table grape, which resembles the Verdal but is sweeter and an excellent shipper; the Cuatro Hermanos olive from Canales (No. 32880), which comes from an altitude of 6,000 feet where heavy frosts and snows occur and which may prove an excellent variety for cultivation on the northern limits of olive culture; and No. 32883, the San Martin autumn melon, related to the Casaba but considered superior in quality.

From our correspondents in various parts of the world, particularly from American diplomatic officials and consuls abroad, who have shown an unusual interest in this work, a number of promising plants have been secured: No. 33184, seeds of a remarkable cherimoya weighing 2 pounds 6 ounces, from a tree owned by Mr. Charles F. O'Brien, of Los Angeles, Cal., and probably one of the best varieties now in the United States; Nos. 32470 to 32477, a collection of fig and grape varieties from the island of Chios, off the coast of Greece, by Mr. Pantelides; No. 32480, the Manila maguey, or cantala, from the Philippine Islands, an agave suited for rich, loamy soils containing little lime and for a climate with heavy rainfall, such as is to be found in the island of Porto Rico; No. 32692, a Mexican species of avocado (*Persea mexicana*) from the province of Vera Cruz, through Consul William W. Canada; No. 32705, another of the hard-shelled edible-fruited species of *Strychnos* from Inhamban, Portuguese East Africa; No. 32706, *Abies numidica*, from the Department of Constantine, Algeria, a spruce which grows to 75 feet in height, occurring at 5,000 to 7,000 feet altitude, sent us by the veteran French botanist, Dr. L. Trabut; Nos. 32713 to 32725, 13 varieties of dates from Egypt; Nos. 32845 to 32859, 15 varieties of dates from the various oases of the Sahara, selected by Dr. Trabut; No. 32730, *Nitraria schoberi*, a remarkably alkali-resistant plant from Australia which, according to Dr. J. H. Maiden, bears edible cherrylike fruits; No. 32751, a new variety of prune from Thun, Bern, Switzerland, for trial in the Oregon prune area; No. 32892, a fodder sedge (*Carex physodes*), collected by Mr. W. W. Mackie in the loose sands of the Peshy Kara Kum Desert, where only 4 inches of rain fall; Nos. 32924 to 32929, six species closely related to the cajuput tree of Australia, remarkable because of its ability to grow rapidly on the coast of Florida along the very edge of the salt water; Nos. 33031 to 33047 and 33155 to 33160, a collection of *Cotoneaster*, remarkable doorway shrubs, with attractive red berries in winter and dark-green foliage in summer, which are especially suited as front and back yard shrubs wherever hardy; No. 33093, a broad-leaved evergreen tree from Java, *Dammara alba*, a close relative of the kauri pine of New Zealand, which ought to be peculiarly suited as an avenue tree in Porto Rico, Hawaii, and possibly in Florida; Nos. 33111 to 33118, eight varieties of edible grapes from the western slopes of Mount Lebanon; No. 33166, *Juglans pyriformis*, a walnut said to be native on the slopes of Mount Orizaba, in southern Mexico; Nos. 33205 to 33234, a remarkable collection of Spanish fruit and ornamental trees from the nurseries of Pedro Giraud, of Granada, which were selected by Mr. Swingle during his recent explorations in Spain and which include the azarol (No. 33205), a large-fruited *Crataegus* with a deli-

cious flavor resembling that of the loquat, the Chopo (No. 33206), a striking, rapidly growing species of poplar almost completely devoid of lateral branches and therefore suited for close planting and for pole production, a shipping pear (No. 33209), of good quality, called "Pera de Aragon," a delicious winter apple (No. 33210) called "Pero Blanco de Ronda," which ripens in January, and an especially hardy almond (No. 33218), which has flowers that hang down and are thus protected from frost injury and in this way insure its fertility when other varieties lose their crops; Nos. 32708 to 32712 and 33250 to 33255, 11 named varieties of udo from Yokohama, Kyoto, and Tokyo, including early, midsummer, and late varieties, for comparison with the seedling sorts now being experimented with in America; No. 33256, an elephant grass of India, *Typha elephantina*, a species related to our cat-tail flag but having leaves 13 feet long; the yam bean of Jamaica (*Cacara erosa*, No. 33258), which, according to the introducer, ought to supersede the arrowroot in cultivation, being a much larger yielder, and the young pods of which are recommended as "string beans," having absolutely no fiber and being excellent when cooked; No. 33263, a cucumberlike vine from the Director of Agriculture of Zanzibar, bearing fruits weighing 60 pounds, from the seeds of which a culinary oil is expressed by the natives; and No. 33277, seeds of the best strains of winter melons of Valencia, which are famous in Spain, 15,000 tons being exported annually.

A special publication is in process of preparation covering the Egyptian expedition of Mr. Aaron Aaronsohn, which was made in search of the Wahi date and which resulted in the introduction of date suckers of 13 promising varieties (Nos. 32713 to 32725).

As heretofore, the manuscript for this inventory has been prepared by Miss Mary A. Austin, the botanical determinations have been made, the notes on geographic distribution compiled, and the notes on nomenclature prepared by Mr. H. C. Skeels, under the supervision of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations, while Mr. S. C. Stuntz has had general supervision of this inventory, as of all the publications of the Office of Foreign Seed and Plant Introduction.

DAVID FAIRCHILD,

Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION.

Washington, D. C., August 29, 1912.

INVENTORY.

32369. PHYTELEPHAS sp.

Ivory-nut palm.

From an island near the west coast of Panama (?). Presented by Mr. M. B. Shantz, Rochester, N. Y. Received January 2, 1912.

"The button industry uses a large amount of vegetable ivory. This is the fruit of a species of palm growing wild in South America, principally in the republics of Ecuador and Colombia. The manufacturers of this city alone use of this material about 15 tons a week, and the question has often arisen as to whether the palm could not be cultivated successfully in Florida or some of the other Southern States." (*Shantz*.)

The plants grown from these seeds will be tested for their suitability to conditions in southern Florida and southern California.

32370. CAPSICUM ANNUUM L.

Red pepper.

From Barcelona, Spain. Presented by Mr. Henry H. Morgan, American consul general. Received January 3, 1912.

"*Pimiento Marrón*." See No. 30084 for previous introduction.

32371. SAPINDUS sp.

Soapberry.

From Brazil. Presented by Mr. Omar E. Mueller, American vice consul, Bahia. Received January 3, 1912.

"These berries have the property of making a lather with water upon being crushed in the hands and are used in the interior in the place of soap. They are the fruit of a tree known here as *Saboneta*, which is indigenous to the dry, arid country of Brazil." (*Mueller*.)

32372 to 32380. AMYGDALUS PERSICA L.

Peach.

From San Antonio, Tex. Grown by Mr. S. H. Hastings, superintendent, San Antonio Experiment Farm. Numbered January 2, 1912.

Mexican seedling peach trees as follows; quoted notes by Mr. Hastings. These were grown from seeds procured by Mr. G. Onderdonk, of Nursery, Tex., while on an exploration trip for the Department of Agriculture in Mexico in 1902-3.

32372. "(No. C 31.) The fruit of this tree closely resembles the Honey peach, which is the best for this section of the South China varieties. In the season of 1910 this tree had much more fruit than the Honey peach, the fruit was more uniform in size, and had a more uniform ripening period. The fruit ripens about the 20th of June, and about a week later than the Honey peach. The tree is a vigorous grower, and Mr. G. Onderdonk recommends it as worthy of propagation."

32373. "(No. E 10.) The fruit of this tree resembles the Honey peach in shape and flavor and is a freestone. The ripening period is about August 18 to 20, or nearly two months later than the Honey variety. Its late-ripening period puts it in the valuable class, although the fruit is not better than the fruit of the Honey peach."

32372 to 32380—Continued.

- 32374.** "(No. I 16.) The fruit of this tree is a large, yellow cling, and has a pleasant, subacid flavor. Ripens about September 3. This peach would be a good shipper. Purely Spanish."
- 32375.** "(No. C 32.) Fruit ripens about August 23 and is a large, light-colored cling. Col. G. B. Brackett considers this peach of good quality and worthy of further trial."
- 32376.** "(No. E 24.) The fruit of this tree ripens about September 1 to 3 and is a freestone. Mr. G. Onderdonk thinks this peach has some South China blood. It has a subacid flavor. Col. G. B. Brackett considers this tree promising."
- 32377.** "(No. H 21.) The fruit ripens about September 7 and is a large greenish cling; quality good. Col. G. B. Brackett thinks it is only suitable for canning."
- 32378.** "(No. H 27.) A medium to large yellow cling, probably purely Spanish. Fruit of medium to good quality, slightly subacid. Ripens about September 15."
- 32379.** "(No. A 16.) Distinctly a South China peach, resembling the Honey peach in all respects, except that it ripens about a month later. Ripening period about July 25."
- 32380.** "(No. D 9.) The fruit of this tree resembles the fruit of the South China type and from indications appears to be a cross between the Spanish and the South China types. It is a freestone and the flavor is good. Ripens about August 10."

32381. LUCUMA sp.

From Mexico. Presented by Mr. Clarence A. Miller, American consul, Tampico.
Received January 5, 1912.

"*Zapota Manti.* This fruit is said to be edible, but not especially palatable. Although the supply is not large this fruit sells in the market at the comparatively low price of 5 cents Mexican each." (*Miller.*)

32382. BROMELIA PINGVIN L.**Pinguin.**

From Tampico, Mexico. Presented by Mr. Clarence A. Miller, American consul.
Received January 5, 1912.

"Wild pineapple, or *Huapillo*. This plant is very prolific in this section. In many places it covers thousands of acres, making a thick jungle. The plant propagates from the seed and by starting suckers from the root or trunk. It flourishes in the lowlands or in the highlands. The plant is drowned out or destroyed if the land is flooded for a number of days.

"The leaves contain a fine quality of fiber. The fruit is used by the natives as a vermifuge. The plant itself is said to contain valuable chemical properties.

"These specimens were obtained from Mr. Alexander Smith, of Tampico." (*Miller.*)

Distribution.—In Panama and the West Indies, and from Colombia to Guiana in the northern part of South America.

32385. MANIHOT sp.**Maniçoba rubber.**

From Brazil, South America. Purchased from Charles W. Jacob & Allison, New York, N. Y. Received January 6, 1912.

32386. PINUS TECOTE Cham. and Schlecht. Okote pine.

From Mexico. Presented by Dr. C. A. Purpus, Zacuapam, Huatusco, Vera Cruz, Mexico. Received January 2, 1912.

"From Esperanza, Puebla. 2,700 to 2,800 meters [8,850 to 9,180 feet] altitude."

Distribution.—Mexico; from San Luis Potosi, where it rises to an elevation of 8,000 feet, southward to the region of Orizaba.

32387 to 32389.

From Siberia. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry. Received January 6, 1911.

Seeds of the following:

32387. FESTUCA sp. Fescue.

From Omsk, Siberia.

"(No. 1629a, July 19, 1911.) A grass said to be native to the steppe country of western Siberia; much grown for hay. Possesses the desirable quality of not sprouting when once plowed under, in case the land is needed for wheat culture. To be tested in the semiarid northwestern sections of the United States." (*Meyer*.)

32388. TRITICUM DURUM Desf. Wheat.

From Chistunka, southwestern Siberia.

"(No. 1630a, September 9, 1911.) A hard-kerneled summer wheat, called *Bjela-turka*, meaning White Turkish. It is much grown throughout western Siberia on account of its resistance to drought and its early-ripening qualities.

"Winter wheats can not be grown successfully in western Siberia, as the winters are too cold and often have very little snow, so at present all wheats raised are summer wheats." (*Meyer*.)

32389. MEDICAGO FALCATA L.

From western Siberia.

"(No. 1634a, July 18 and October 4, 1911.) The *sholteek*, as this wild alfalfa is generally called in western Siberia, occurs over the greater part of Eurasia, being found in the Himalayas as low down as the thirtieth degree of latitude, near Yakutsk, and in Norway between the sixtieth and seventieth parallels. There is a very great amount of variation to be observed in the wild plant; some forms grow up to from 5 to 6 feet and may be fairly erect, while others reach a height of a few inches only and are often prostrate in habit. The more prostrate forms lend themselves excellently for naturalization purposes on dry pasture grounds, while the erect varieties may be cultivated for forage purposes in sections of the United States where the ordinary alfalfa gets winter killed. The present habits of this *sholteek* indicate that possibly a great amount of selection and breeding may have to be done before ideal types will have been evolved, but the many excellent qualities this plant possesses, viz, the eagerness with which all sorts of domestic animals devour it, its apparently great nutritive capacities, especially for milk cows, its remarkable resistance to drought, to close grazing, and to adverse conditions in general, all seem to make it well worth while to spend some extra efforts on improvement. The roots of this *sholteek* also possess the capacity of producing new plants whenever cut off or when exposed to the air on account of the soil having been washed away. This characteristic is of great value in pasture grounds, where the crowns are easily damaged by the close grazing and by the hoofs of the animals trampling over them. The soil best suited to this *Medicago* seems to be a blackish, well-drained

32387 to 32389—Continued.

earth, but one also finds that it grows luxuriantly in pebbly banks and in dry cliffs composed of sandy loam. This seed should be tested especially for naturalization purposes in pasture grounds in the semiarid belt of northwestern United States." (*Meyer.*)

32390. RHUS LANCEA L. f.**Karree.**

From Pretoria, Union of South Africa. Presented by Mr. J. Burtt Davy, Government agrostologist and botanist, Department of Agriculture. Received January 3, 1912.

"The karree-boom of the southwestern Transvaal and adjacent Bechuanaland. It is a valuable hardwood tree for regions of limited rainfall (10 to 15 inches in summer). The fruits are edible. The tree can be grown from poles, as in the case of willows." (*Davy.*)

Distribution.—Found in the Uitenhage and Albany districts of Cape Colony.

32391. VACCINIUM VITIS-IDAEA L.**Cowberry.**

From Norrland, Sweden. Presented by Dr. V. Wittrock, director, Botanic Gardens, Albano, Stockholm, Sweden. Received January 6, 1912.

Seeds.

32392 to 32396.

From Salisbury, Rhodesia. Presented by Mr. H. Godfrey Mundy, agriculturist and botanist, Department of Agriculture. Received January 6, 1912.

Seeds of the following; quoted notes by Mr. Mundy:

32392. CITRULLUS VULGARIS Schrad.**Watermelon.**

"Kafir melon. *Marjorta.*"

This seed shows great variation.

32393. LAGENARIA VULGARIS Ser.**Calabash.**

"Large bottle."

32394. UAPACA SANSIBARICA Pax.**Mahobohobo.**

"Tree having edible fruit and good light timber."

32395. PARINARI MOBOLA Oliver.**Mola.**

"M'hatsha tree. Edible fruit, and timber of some value."

Distribution.—The Batoka Highlands, Angola, and the Mozambique district of southern tropical Africa.

32396. WIDDRINGTONIA WHYTEI Rendle.**Mlanje cypress.**

"The only conifer indigenous to Melssetter district, southern Rhodesia. The tree occurs on the eastern escarpment at an elevation of 6,000 to 7,000 feet."

For description see No. 28690.

32397 to 32398. CITRUS DECUMANA (L.) Murr.**Pomelo.**

From China. Presented by Mr. John M. Nixon, New York, N. Y. Received January 9, 1912.

"These pomelo seeds were sent me by a missionary and are of the white and pink variety of the celebrated Amoy product. The fruit is about the size and shape of our shaddock but without its dryness and bitter taste." (*Nixon.*)

32397. White variety.

32398. Pink variety.

32399. CHAETOCHLOA COSTATA (Roxb.) Skeels.

(*Panicum costatum* Roxburgh 1832, Flora Indica, vol. 1, p. 312.)

The seeds of this grass received from India were identified as *Panicum costatum* Roxburgh, but as it is more closely related to the type of the genus *Chaetochloa* it is here placed in that genus.

Chaetochloa costata was described by Roxburgh from cultivated plants received from Mauritius, where it is common in fields and woods. It is also generally introduced throughout the Tropics of both hemispheres.

From Sibpur, near Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received January 9, 1912.

32400. PERSEA AMERICANA Miller.**Avocado.**

From Orange, Cal. Presented by Mr. C. P. Taft. Received January 10, 1912.

"Fruit absolutely seedless but very small, 3 to 5 inches in length and $\frac{3}{4}$ to 1 inch in diameter. Of possible use in breeding experiments. (Peter Bisset.)

32401 to 32403.

From Central America. Presented by Prof. A. S. Hitchcock, of the Bureau of Plant Industry. Received January 12, 1912.

Seeds of the following; quoted notes by Prof. Hitchcock:

32401. SALVIA sp.

"*Chían*.—Obtained on the market at Punta Arenas, Costa Rica. It is used there in the preparation of a refreshing drink. It was purchased at a drug store by an American physician and by him given to me. I was unable to ascertain the source of the supply, but apparently it is a product of the country."

32402. CHRYSOBALANUS ICACO L.**Icaco.**

"From San Salvador, Salvador. A common fruit sold in the markets and by street vendors. Various colors, especially a yellow and a purple variety."

"Shrub 2 meters [$6\frac{1}{2}$ feet] high, found on dry beaches; known as '*Cocoa-plum*.' Fruits about the size of a plum, used for preserves." (Cook and Collins, *Economic Plants of Porto Rico*, p. 114.)

Distribution.—From Acapulco in southern Mexico southeastward through Central America and tropical America, in the West Indies, and in western tropical Africa.

32403. PASSIFLORA LIGULARIS Juss.**Passion fruit.**

"From Santa Ana, Salvador. Commonly sold on the streets. The leathery covering is broken and the seeds with the containing pulp are sucked out."

32404. SOLANUM NIGRUM L.**Nightshade.**

From Kew, England. Procured from the Herbaceous Botanical Garden at Kew, by Prof. William R. Lazenby, Ohio State University, Columbus, Ohio. Received August 31, 1911. Numbered January 13, 1912.

"Plant very dwarf; spreading in habit." (Lazenby.)

32405 to 32424.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, January 11 and 12, 1912.

Seeds of the following; quoted notes by Mr. Meyer:

32405 to 32424—Continued.

32405. TRITICUM AESTIVUM L.

Wheat.

From Krassny Koot, Samara Government, Russia.

"(No. 1707a, November 20, 1911.) Variety *graecum*. A variety of soft summer wheat, called *Khivinskaia*, coming originally from dry and hot Khiva, Russian Turkestan. This grain at Krassny Koot, however, was received from a firm in Germany named Dreifus. This wheat produces a flour especially suitable for biscuit making and may be found valuable in America for this purpose." (Meyer.)

32406. AGROPYRON CRISTATUM (L.) Beauv.

From near Sarepta, Saratov Government, Russia.

"(No. 1708a, November 28, 1911.) A form of this very promising fodder grass, occurring on very sandy, dry hill slopes in the vicinity of Sarepta. Of value for sandy lands in the semiarid belt of the United States." (Meyer.)

32407. AGROPYRON sp.

From near Sarepta, Saratov Government, Russia.

"(No. 1709a, November 28, 1911.) A grass occurring here and there on very sandy soil. Grows in clumps. Of value as a forage grass on dry, sandy lands in the semiarid belt of the United States." (Meyer.)

32408. MEDICAGO SATIVA VARIA (Mart.) Urban.

Sand lucern.

From Krassny Koot, Samara Government, Russia.

"(No. 1710a, November 20, 1911.) A very strong-growing hybrid alfalfa having erect heavy stems which are well supplied with foliage. Obtained from Mr. W. S. Bogdan, at Krassny Koot, who is making extensive selection and hybridization experiments with *Medicago falcata* and has obtained a number of very promising types, some of which are suitable for raising exclusively for hay, while others are better for pasturing purposes.

"The climate around Krassny Koot is of a severely continental nature. The summers are hot and dry and the winters long and cold, with very little snow, as a rule. The medicagos selected there may prove especially suited to the drier portions of the western United States. The plant from which these seeds came bears Mr. Bogdan's No. 158, and is one of his best types." (Meyer.)

32409. MEDICAGO FALCATA L.

From near Sarepta, Saratov Government, Russia.

"(No. 1711a, November 28, 1911.) An alfalfa of moderate growth occurring on very sandy, dry hill slopes in a country where there is much limestone formation. Probably there are several types or, perhaps, even species in this lot of seed. To be tested in dry, sandy localities." (Meyer.)

32410. MEDICAGO sp.

From near Sarepta, Saratov Government, Russia.

"(No. 1712a, December 1, 1911.) An alfalfa occurring on dry, elevated lands along a ditch, of robust almost erect growth. Is either a form of *Medicago falcata* or *M. coerulea* which has been collected near Sarepta. Suitable for dry situations." (Meyer.)

32411. MEDICAGO FALCATA L.

From near Saratov, Russia.

"(No. 1713a, November 23, 1911.) An alfalfa of erect growth, found on dry, stony places on the hills near Saratov." (Meyer.)

32405 to 32424—Continued.

32412. *MEDICAGO FALCATA* L.

From Krassny Koot, Samara Government, Russia.

"(No. 1714a, November 29, 1911.) This seed was presented by Mr. W. S. Bogdan. Among it there are all possible types, and it is recommended, therefore, for general naturalization purposes and should be sown in a dry northern locality for the selection of promising types." (*Meyer.*)

32413. *ASTRAGALUS ALBICAULIS* DC.

From near Sarepta, Saratov Government, Russia.

"(No. 1715a, November 28, 1911.) This plant occurs on dry, sandy hill slopes. Looks to be promising as a possible fodder plant for semiarid regions." (*Meyer.*)

Distribution.—The Caucasus region of southeastern Russia.

32414. *CORONILLA VARIA* L.

From near Saratov, Russia.

"(No. 1716a, November 23, 1911.) A perennial legume, found on dry hill slopes and in loess ravines. Roots sent under No. 993 (S. P. I. No. 32305): see this number for further remarks." (*Meyer.*)

32415. *LATHYRUS SYLVESTRIS* L.

From near Penza, Russia.

"(No. 1717a, November 17, 1911.) A very strong-growing perennial *Lathyrus* found between scrub. Of possible value for forage purposes on shady places in dry, cold regions." (*Meyer.*)

Distribution.—Western and southern Europe, extending from Scandinavia and the British Isles southward to Spain, and eastward through Italy, Servia, Bulgaria, Turkey, and central and southern Russia to the Caucasus region.

32416. *BRASSICA JUNCEA* (L.) CASS.

Mustard.

From Sarepta, Saratov Government, Russia.

"(No. 1718a, December 1, 1911.) Seed of the famous Sarepta mustard, which is extraordinarily strong and in great favor throughout Russia. To possess the right pungency this mustard requires a rich, blackish soil and a hot and dry summer, with nights not too warm. The region around Sarepta seems to supply such a climate, the summers being warm enough to ripen grapes in the open, although the vines are buried deeply in winter. It may be that this short, hot summer assists in making this mustard so strong, for the manager of a large mustard factory stated that seeds from Sarepta mustard grown in Tambov Government, a region also having black soil, but slightly cooler, do not possess the required strength. India-grown seed also was not as pungent as that cultivated near Sarepta. This may possibly be grown to advantage in certain sections of eastern Oregon.

"The seeds, besides being ground into powder, are often eaten sprinkled over fried meats or mixed in sauces and when used in this manner they give dishes an agreeable, spicy flavor. The oil expressed from them is not at all strong and is in very great demand for culinary purposes in the section around Sarepta, being much preferred to sunflower-seed oil, as the mustard is less adulterated.

"These seeds were obtained from the manager of the well-known mustard factory of J. C. Glitch, in Sarepta." (*Meyer.*)

32405 to 32424—Continued.

32417. *MALUS* sp.

Apple.

From near Sarepta, Saratov Government, Russia.

"(No. 1719a, November 28, 1911.) A genuine wild apple, occurring in the ravines in the vicinity of Sarepta. Sometimes seen as solitary shrubby specimens, sometimes as medium-sized trees in groves. The fruits are said to be very variable as regards size, flavor, and color. Of value possibly for breeding experiments in originating varieties of apples that are able to stand more drought than our present varieties." (*Meyer.*)

32418. *JUGLANS REGIA* L.

Walnut.

From Rostov, Russia.

"(No. 1720a, December 12, 1911.) A very large variety of walnut, being imported from Constantinople, but possibly grown somewhere in northern Persia or Asia Minor. Sells in Rostov at 30 kopecks (15 cents) a pound." (*Meyer.*)

32419. *CORYLUS AVELLANA* L.

Hazelnut.

From Rostov, Russia.

"(No. 1721a, December 12, 1911.) A very large variety of hazelnut, said to come from Persia, called *Persisky kurtshawi*. This name may be fictitious, as Armenian fruit dealers in Rostov are unreliable." (*Meyer.*)

32420. *CORYLUS AVELLANA* L.

Hazelnut.

From Rostov, Russia.

"(No. 1722a, December 12, 1911.) A very large variety of hazelnut, said to come from Constantinople, but cultivated probably somewhere in the southwestern Caucasus or in Asia Minor." (*Meyer.*)

32421. *PHOENIX DACTYLIFERA* L.

Date.

From Rostov, Russia.

"(No. 1723a, December 12, 1911.) A very large variety of date of dark color and having little saccharine. Said to be grown in Persia and imported through Constantinople. New types may possibly be obtained from this lot." (*Meyer.*)

32422. *ACER TATARICUM* L.

Maple.

From near Sarepta, Saratov Government, Russia.

"(No. 1724a, November 28 and December 1, 1911.) A shrubby maple occurring on dry hill slopes and in gullies and ravines, effectually preventing the soil from being washed away, and of value for this reason in those semiarid sections of the United States where much land is being lost through erosion." (*Meyer.*)

Distribution.—Southeastern Europe, extending from Hungary and Bulgaria eastward to the Caucasus region, and in Asia Minor and Armenia.

32423. *EUONYMUS VERRUCOSUS* Scopoli.

From near Sarepta, Saratov Government, Russia.

"(No. 1725a, November 28, 1911.) A hardy shrub growing 3 to 5 feet in height, occurring in shady places. Of value as undergrowth beneath trees and tall shrubs in the parks and gardens of the semiarid sections of the United States." (*Meyer.*)

Distribution.—A shrub found in central and southern Europe and western Asia, extending from the eastern part of the German Empire eastward through Dalmatia, Bosnia, central and southern Russia to the Ural region of Siberia.

32405 to 32424—Continued.**32424. PRUNUS SPINOSA × DOMESTICA.****Plum.**

From Kozlov, Tambov Government, Russia.

“(No. 1726a, December 28, 1911.) This plum is a hybrid between *Prunus spinosa* and *P. domestica* var. *Green Reine Claude*; originated by Mr. I. V. Mijurin, Kozlov, Tambov Government, and temporarily named by him *Tjorn Sladky Chorny*, meaning ‘sweet black sloe.’ Scions sent under No. 1014 (S. P. I. No. 32671); see this number for further remarks.” (*Meyer.*)

32425. ANNONA CHERIMOLA Miller.**Cherimoya.**

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional. Received January 2, 1912.

Seeds.

32426. PERSEA AMERICANA Miller.**Avocado.**

From Musa Isle Grove, Miami, Fla. Presented by Mr. J. P. Roop, through Mr. H. F. Schultz. Bud wood sent to Mr. Edward Simmonds, gardener, in charge of Subtropical Plant Introduction Garden, Miami. Numbered January 15, 1912.

“*Roop.* A very good late variety which Mr. Roop states always produces generous crops of fruit which ‘hang on’ late in December and January. This season the *Trapp* and most other late avocados ripened and dropped their fruit earlier than usual, speaking well for the persistent properties of this variety. I consider the flavor superior to the *Trapp*; the seed always seems to be firm, but it is unfortunately rather large in proportion to the size of the fruit.” (*Schultz.*)

32427. MEDICAGO SATIVA L.**Alfalfa.**

From India. Procured through Mr. F. Booth Tucker, Salvation Army, The Mall, Simla. Received January 15, 1912.

32428. PUERARIA THUNBERGIANA (S. and Z.) Benth.**Kudzu.**

From Sapporo, Japan. Presented by Prof. T. Minami, College of Agriculture, Tohoku Imperial University. Received January 2, 1912.

Root cuttings.

32429 to 32455.

From India. Collected by Mr. C. V. Piper, of the Bureau of Plant Industry. Received January 12, 1912.

Seeds of the following; quoted notes by Mr. Piper:

32429. BRACHIARIA ERUCIFORMIS (Smith) Griseb.

From Kirki.

“(No. 141, October 14, 1911.) One of the best pasture grasses in India, each plant producing a dense mass of fine stems a foot or more high. It produces seed in great abundance.”

Distribution.—Southern Europe and Asia, extending from Italy eastward through Greece, Asia Minor, and northern Persia to India; also in Egypt, Abyssinia, and South Africa.

32429 to 32455—Continued.

32430. RYTILIX GRANULARIS (L.) Skeels.

(*Cenchrus granularis* L., 1771, Mantissa Plantarum, p. 575.)

The seeds of this grass were received under the name *Manisuris granularis* Swartz, 1778 (Nova Genera et Species Plantarum, p. 25), which is based on *Cenchrus granularis* L. However, Linnæus had published in 1771 (Mantissa Plantarum, pp. 164, 300) the generic name *Manisuris* with one species *M. myurus*, which is not now considered to be congeneric with *Cenchrus granularis* L., thus invalidating the use of the generic name *Manisuris* for the latter species. This fact was recognized by Kuntze, who proposed for *Cenchrus granularis* L. the name *Hackelochloa* (Revisio Generum Plantarum, 1891, pt. 2, p. 776). However, in 1830, Seringe (Bulletin Botanique, vol. 1, p. 219) had published the generic name *Ryttilix*, citing "*Manisuris granularis* et *myurus* Auct." and listing one species, *R. glandulosa*. While there is no description, the facts that *M. granularis* was cited first, that the name *R. glandulosa* is proposed and that "*glandulosa*" and "*granularis*" are considered to refer to the same plant characteristic, lead one to consider *Manisuris granularis* to be the type of the genus *Ryttilix*.

From Kirki.

"(No. 142, October 14, 1911.) An annual grass that may be valuable after the manner of crab-grass."

Distribution.—Found throughout the tropical region of India and is generally distributed in the Tropics of both hemispheres.

32431. INDIGOFERA LINIFOLIA (L. f.) Retzius.

From Kirki.

"(No. 143, October 14, 1911.) Said to be one of the best pasture legumes in India."

Distribution.—Throughout India from the Himalayas to Ceylon; also in Abyssinia, Afghanistan, the Malay Archipelago, and northern Australia.

32432. ALYSICARPUS LONGIFOLIUS (Rottl.) Wight and Arn.

From Kirki.

"(No. 144, October 14, 1911.) A tall, erect species being tested for hay at Kirki."

Distribution.—Throughout the plains of British India.

32433. SYNTHESISMA SANGUINALIS (L.) Dulac.

From Kirki.

"(No. 145, October 14, 1911.) Similar to our common crab-grass."

32434. CROTALARIA ORIXENSIS Willd.

From Kirki.

"(No. 146, October 14, 1911.) A creeping species abundant in sorghum, etc., at Kirki. The green pods are eaten by boys."

Distribution.—Throughout the plains of India and in Abyssinia.

32435. MNESITHEA EXALTATA (L.) Skeels.

(*Aegilops exaltata* L., 1771, Mantissa Plantarum, p. 575.)

(*Ophiuros corymbosa* Gaertner f. 1805, Fructibus et Seminibus Plantarum, vol. 3, p. 3, pl. 181.)

The seeds of this grass were received under the name *Ophiuros corymbosa* (L. f.) Gaertn. f. In publishing the genus *Ophiuros*, Gaertner cited Rott-

32429 to 32455—Continued.

boellia Linn. and Juss., and described and figured two species. Under the first, *O. incurvata*, are cited the descriptions of *Aegilops incurvata* L. and *Rottboellia incurvata* L. f. Under the second, *O. corymbosa*, are cited the descriptions of *Aegilops exaltata* L. and *Rottboellia corymbosa* L. f.; the latter of which is based on *Aegilops exaltata*, the specific name being changed because of *Rottboellia exaltata* L. f. appearing earlier on the same page of the Supplementum (1781, p. 114). The generic characterization covers both grasses; but the first species is more completely described, Gaertner not having any fertile flowers of the second, of which he remarks that it might prove to be very closely related to *Digitaria* if the flowers were better known. It would therefore seem necessary to consider the first species, *O. incurvata*, as the type of the genus *Ophiuros*. As *Aegilops exaltata* is not now considered to be congeneric with *O. incurvata* it must be referred to another genus. In 1829, Kunth (Revision des Graminées, vol. 1, p. 153) published the genus *Mnesithea* with one species, *M. laevis*, based on *Rottboellia laevis* Retzius. As this grass is considered to be congeneric with the species received as *Ophiuros corymbosa*, the latter is here placed in the genus *Mnesithea*, the earliest specific name, *exaltata*, being restored.

From Poona.

“(No. 147, October 13, 1911.) A rather coarse grass, but cut for fodder.”

Distribution.—Found on dry hills at the base of the Himalayas, where it rises to an elevation of 3,500 feet, in the Khasi Hills and southward in the Dekkan Peninsula of India; also in the States of North Australia and Queensland in Australia.

32436. HEYLANDIA LATEBROSA (L.) DC.

From Kirki.

“(No. 148, October 14, 1911.) A prostrate legume abundant in the Dekkan. Said to be good fodder.”

Distribution.—Throughout the tropical region of India from the valley of the Ganges to Ceylon.

32437. PANICUM TRYPPERON Schultes.

From Kirki.

“(No. 149, October 14, 1911.) A large annual *Panicum* producing enormous panicles 12 to 18 inches long and nearly as broad. These panicles break off and drift over the country after the manner of tumbleweeds. The grass is considered fair forage.”

Distribution.—From India eastward to China and Borneo, and in tropical Africa.

32438. ISCHAEMUM PILOSUM (Klein) Hackel.

From Kirki.

“(No. 150, October 14, 1911.) A tall, rather coarse grass growing on comparatively low ground. It makes only fair forage.”

Distribution.—In the Central Provinces and in the Dekkan Peninsula of India.

32439. ARTHRAXON LANCEOLATUS (Roxb.) Hochst.

From Kirki.

“(No. 151, October 14, 1911.) A grass growing about Poona in more or less shaded places, especially where somewhat moist.”

32429 to 32455—Continued.

Distribution.—From the western Himalayas, where it rises to an elevation of 8,000 feet, southward to the Coromandel Coast of India, and eastward to the provinces of Chihli, Kiangsu, Hupeh, and Yunnan in China; also in Nubia and Abyssinia in northern Africa.

32440. ANDROPOGON CARICOSUS L.

From Kirki.

“(No. 152, October 14, 1911.) A grass abundant throughout northern and central India and considered excellent forage. Much of it is cut for hay.”

32441. ANDROPOGON ANNULATUS Forsk.

From Kirki.

“(No. 153, October 14, 1911.) Very similar to the preceding, but with much more slender stems.”

Distribution.—Throughout the plains and hills of India, and in tropical Africa, China, the Pacific islands, and in Australia.

32442. PAROCHETUS COMMUNIS Hamilton.

From Utakamand.

“(No. 154, October 24, 1911.) Collected on wet banks. The leaves are like white clover and the scapes bear one or two bright-blue flowers.”

Distribution.—From the alpine slopes of the Himalayas southward and eastward to Ceylon and Burma in India, and in the Malay Archipelago to Java, also in tropical Africa.

32443 to 32448.

“A collection of grasses from Utakamand. All grow on the meadowy tops of the Nilgiri Hills. The climatic conditions in the Nilgiri Hills are very much like those of the coast region in California, the principal trees being Australian eucalypts and acacias and such California trees as the Monterey pine and *Cupressus macrocarpa*.”

32443. TRIPOGON FILIFORMIS Nees.

“(No. 155, October 24, 1911.) A perennial grass forming a considerable element of the grassy meadows.”

Distribution.—In India on the temperate slopes of the Himalayas at an elevation of 5,000 to 10,000 feet, between Dalhousie and Bhutan and on the Khasi Hills.

32444. THEMEDA TRIANDRA Forsk.

Probably variety *Themeda roylei* Hook. f.

“(No. 156, October 23, 1911.) An abundant element of the grassy meadows of the Nilgiri Hills and considered good forage.”

Distribution.—In the drier parts of India from the lower Himalayas to Burma and Ceylon, and generally distributed in the Tropics of the Eastern Hemisphere.

32445. ISCHAEMUM CILIARE VILLOSUM (Nees) Hackel.

“(No. 157, October 25, 1911.) Locally abundant in the grassy meadows of the Nilgiri Hills.”

Distribution.—From the eastern part of India southeastward through the Malay Archipelago to China and Australia.

32446. BRACHYPODIUM SYLVATICUM (Huds.) Beauv.

“(No. 158, October 23, 1911.) Common in shady places in the Nilgiri Hills at 6,000 feet altitude.”

32429 to 32455—Continued.**32443 to 32448—Continued.**

Distribution.—In woods, hedges, and thickets throughout Europe and eastward through northern Asia to the provinces of Shingking and Hupeh, China.

32447. ANDROPOGON PERTUSUS INSCULPTUS (Hochst.) Hook.

“(No. 159, October 23, 1911.) This grass is abundant in the Nilgiri Hills near Utakamand, and is considered one of the most nutritious of the south India grasses for hay and pasturage.”

Distribution.—Found with the species, which grows in southern Europe and Asia and northern Africa and Australia.

32448. ARUNDINELLA FUSCATA Nees.

“(No. 160, October 25, 1911.) Abundant on the Nilgiri Hills at 6,000 feet altitude and is considered to be an excellent pasture grass.”

Distribution.—On the Nilgiri Hills at an elevation of 6,000 feet and at Rangoon, in India.

32449. CASSIA sp. (?)

From Utakamand.

“(No. 161, October 25, 1911.) Common throughout the Nilgiri Hills. Shrub, 3 to 6 feet high. Said to be American.”

32450. RUBUS RUGOSUS Smith.

Raspberry.

From Utakamand.

“(No. 162, October 24, 1911.)”

“A tall climber, evergreen in mild climates, bearing comparatively large fruit. The fruit is dark red, turning black, makes delicious jam, and is borne the year around in the vicinity of Melbourne.” (*Mueller, Select Plants.*)

Distribution.—In the upper part of the province of Nepal in northern India.

32451. RUBUS GOWREEPHUL Roxb.

From Utakamand.

“(No. 163, October 24, 1911.)”

Distribution.—On the slopes of the mountains in the northern part of India.

32452. PANICUM ANTIDOTALE Retz.

From Agra.

“(No. 164, October 7, 1911.) A species much like Guinea grass, but rather harsher. Of doubtful value.”

Distribution.—Southern Asia, from Afghanistan southeastward through India to Ceylon, and in northern Africa and tropical Australia.

32453. RUBUS LASIOCARPUS Smith.

Raspberry.

From Bangalore.

“(No. 165, October, 1911.) A blackcap raspberry, native on the Nilgiris and cultivated about Bangalore. Larger than *Rubus occidentalis* and more juicy, but not so spicy in flavor. Will stand 20° F. Should be an excellent berry for the Southern States.”

Distribution.—Temperate slopes of the Himalayas at an altitude of 5,000 to 10,000 feet, in northern India, and on the hills of southern India; also in Ceylon and Java.

32454. ANNONA CHERIMOLA Miller.

Cherimoya.

From Nilgiri Hills.

“(No. 166, October 25, 1911.) Grown at 5,000 feet elevation. An excellent fruit. This was introduced into India with the cinchona from Peru. (See note

32429 to 32455—Continued.

to this effect in Markham's Travels in India and Peru.) It is probable that all the cherimoyas in India are the progeny of this stock. Mr. George Oakes, who presented the seed, says that it comes absolutely true."

32455. TRICHOLAENA ROSEA Nees.

Natal grass.

From Poona.

"(No. 167.) Purchased from the Empress Botanic Gardens, Poona. In India this is cultivated only as an ornamental."

32457 and 32458. PRUNUS spp.

Seeds of the following, collected by Mr. W. F. Wight, of this Department, turned over to the Office of Foreign Seed and Plant Introduction January 9, 1912.

32457. PRUNUS sp.

Collected in Montmorency County, Mich. To be used for breeding purposes.

32458. PRUNUS MEXICANA S. Watson.

Plum.

Collected near Denison, Tex.

Distribution.—From western Tennessee southeastward to the vicinity of San Antonio, Tex.

32459. MACHILUS NANMU (Oliv.) Hemsl.

Nanmu.

From Tangho, Chiangchin, China. Presented by Mr. Albert W. Pontius, American consul, Chunking, China. Received January 19, 1912.

See Nos. 28128, 29485, and 30039 for previous introductions.

Seeds.

32460. CITRUS LIMETTA Risso.

Lime.

From Honolulu, Hawaii. Presented by Mr. J. E. Higgins, horticulturist, Hawaii Agricultural Experiment Station. Received January 19, 1912.

Cuttings.

Kusaie.

"This variety was introduced into Hawaii about 20 years ago from the island of the same name in the South Seas. It has proved to be a very good fruit-bearing tree, quite as healthy and vigorous as any of our limes, bearing fruit at almost all seasons of the year. The fruit is of medium to large size. The rind is rather thin and tender, which might bar this variety for commercial use. It is, however, an ideal lime for the family fruit garden." (*Higgins.*)

32461 and 32462. EUCALYPTUS spp.

From Sydney, New South Wales. Presented by Mr. R. T. Baker, curator, Technological Museum. Received January 20, 1912.

Seeds of the following; quoted notes taken from Baker and Smith, *Eucalypts and Their Essential Oils*, 1902. See this work for further description.

32461. EUCALYPTUS SMITHII R. T. Baker.

Gully-ash.

"A tall, quick-growing tree, sometimes attaining a height of 150 feet and a diameter of from 2 to 5 feet. Bark on old trees deeply furrowed, and in color dark gray to blackish up to the branches. It is famous for its eucalyptol oil."

Distribution.—A tree often 200 feet tall, found on steep mountain slopes in the southeastern part of New South Wales, Australia.

32461 to 32462—Continued.**32462. EUCALYPTUS UMBRA** R. T. Baker. **Bastard white-mahogany.**

"A tall, foliaceous tree, attaining sometimes a height of 100 feet, with a dark-colored, stringy bark. Timber pale-colored, darker than 'White-mahogany,' *E. acmenoides* Schau. It is subject to the attacks of a borer, which, of course, deteriorates its quality as a marketable timber. It is hard, close-grained, but is rather an inferior timber to 'White-mahogany,' a fact well known to timber-getters."

Distribution.—A tree sometimes 100 feet tall, found in the northern part of New South Wales, Australia.

32463. ANNONA SQUAMOSA L. **Sweetsop.**

From Papua. Presented by Mr. J. A. Hamilton, Port Moresby. Received January 20, 1912.

"The fruits of this variety are small, but flavor delicious; by cultivation it might be improved." (*Hamilton.*)

Seeds.

32464. DIOSPYROS SENEGALENSIS Perrott.

From Pretoria, Union of South Africa. Presented by Mr. C. L. Legat, Chief Conservator of Forests, Forest Department. Received January 22, 1912.

"A shrub or tree from 6 to 40 feet high or more. Wood much thought of by the natives, white, compact, or black in the center like ebony, and useful for many purposes. Fruit $\frac{3}{4}$ to 1 inch in diameter, edible. Range from Abyssinia and Mozambique on the east to Angola, the Kongo, and the Gold Coast on the west. Apparently very widely scattered, known as monkey guava in the west, and as aje in Abyssinia." (*Hiern, Ebenaceae, pp. 165-166.*)

32470 to 32477.

From Chios, Greece. Presented by Mr. N. J. Pantelides. Received January 26 and 27, 1912.

Cuttings of the following; quoted notes by Mr. Pantelides:

32470 to 32474. FICUS CARICA L.**Fig.**

32470. "*Lombard.* Black with reddish interior."

32471. "*Vassilica* (Royal). Black."

32472. "*Ysterounelea.* This species bears fruit twice a year. They are very small but very sweet."

32473. "*Ambourcouna.* Black. Fruits twice a year."

32474. "*Metilinia.* White. These succeed also among oranges."

32475 to 32477. VITIS VINIFERA L.**Grape.**

32475. "*Apatsiana.* Black. Table variety."

32476. "*Crassera.* Black wine grapes noted for their great production."

32477. "*Areoussia.* Rose-colored wine and table grapes. From these grapes was made the ancient wine of Chios. This vine is long lived, and succeeds as a climber; it may cover thus a pavilion of 100 square meters [120 square yards], and may yield up to a ton of fruits."

32478 and 32479. ANNONA CHERIMOLA Miller. Cherimoya.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose. Received January 25, 1912.

"Seed from two anonas from Judge Castro Carillo. He says they are very good and of extraordinary size." (*Wercklé.*)

32480. AGAVE CANTALA (Haw.) Roxb. Manila maguey.

From Manila, Philippine Islands. Presented by Mr. O. W. Barrett, Chief, Division of Experiment Stations, Bureau of Agriculture, through Mr. Lyster H. Dewey, of the Bureau of Plant Industry. Received January 29, 1912.

"Manila maguey is cultivated in the Philippines and to a limited extent in India, where it produces the fiber known as Bombay aloe. It is cultivated on a large scale in Java, producing a very excellent quality of fiber which has heretofore been placed on the market under the misleading name "Java sisal." The Javanese growers now propose that this fiber shall be called "cantala." It grows well in Java on rich, loamy soils, where the heavy rainfall and lack of lime make it impossible to cultivate sisal or henequen to good advantage. This plant would probably grow well in the eastern part of Porto Rico." (*Dewey.*)

32481 and 32482.

From Honolulu, Hawaii. Presented by Mr. J. E. Higgins, horticulturist, Hawaii Agricultural Experiment Station. Received January 29, 1912.

Seeds of the following:

32481. CITRUS LIMETTA Risso. Lime.

Kusaie. Cuttings of this variety received under S. P. I. No. 32460.

32482. CARISSA GRANDIFLORA (E. Mey.) DC. Amatungulu.

32484 and 32485. HORDEUM spp. Barley.

From Hwaiyuan, Anhwei, China. Presented by Dr. Samuel Cochran, Hope Hospital. Received January 29, 1912.

Seeds of the following; quoted notes by Dr. Cochran:

32484. "This is called *Nu er ta meh*, which means 'daughter barley.'"

32485. "Barley with long awns called *Mi ta meh* or 'rice barley.'"

32486. RUBUS sp. Raspberry.

From Newara Eliya, Ceylon. Collected by Mr. C. V. Piper, of the Bureau of Plant Industry. Received January 29, 1912.

"(No. 85, August 27, 1911.) A spiny-stemmed red raspberry. Fruit small, smooth, in clusters. Flowers white. Stems ascending 4 to 10 feet." (*Piper.*)

32487. PHASEOLUS TRILOBATUS (L.) Schreber.

From Coimbatore, India. Collected by Mr. C. V. Piper, of the Bureau of Plant Industry. Received January 29, 1912.

"(October 26, 1911.) A trailing legume, abundant on low ground." (*Piper.*)

Distribution.—From the Himalayas, where it ascends to an elevation of 7,000 feet, to Ceylon and Burma; also in the Malay Archipelago and in Nubia and Abyssinia.

32488. STIZOLOBIUM sp.

From India. Presented by I. H. Burkhill, Office of the Reporter on Economic Products to the Government of India, Indian Museum, Calcutta, through Mr. C. V. Piper, of the Bureau of Plant Industry. Received January 29, 1912.

"Cultivated by the natives in the neighborhood of Darjiling, under the name *Kaoso Simbi*." (Piper.)

32489. STIZOLOBIUM sp.

From Bangalore, Mysore, India. Procured by Mr. C. V. Piper, of the Bureau of Plant Industry. Received January 29, 1912.

"Secured in the Agriculture Exhibit, October, 1911." (Piper.)

32490. ZEA MAYS L.**Corn.**

From Georgetown, Demerara, British Guiana. Presented by Mr. F. A. Stockdale, Assistant Director, Science and Agriculture and Government Botanic Gardens. Received February 1, 1912.

Creole.

32491 to 32655.

Seeds secured by Mr. C. V. Piper, of the Bureau of Plant Industry. Received November, 1911. Numbered February 1, 1912.

Quoted notes by Mr. W. J. Morse, of the Bureau of Plant Industry.

32491 to 32598. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

From Calcutta, India. Received November 17, 1911, from the Economic Botanist.

32491 to 32533. "These are black with small seeds and appear identical as to seeds with S. P. I. Nos. 24678 to 24689 received from India in 1909.

32491. "Reg. No. 32045. From Purtabghur, United Provinces."

32492. "Reg. No. 32046. From Sultanpur, United Provinces."

32493. "Reg. No. 32047. From Lucknow, United Provinces."

32494. "Reg. No. 31577. From Patna Division."

32495. "Reg. No. 32175. From Nocha, Farukhabad, United Provinces."

32496. "Reg. No. 32176. From Bahadurpur, Farukhabad, United Provinces."

32497. "Reg. No. 32177. From Ismail Digon, Farukhabad, United Provinces."

32498. "Reg. No. 32178. From Pasgawn, Kheri, Oudh, United Provinces."

32499. "Reg. No. 32179. From Bijna, Kheri, United Provinces."

32500. "Reg. No. 32180. From Sansarpur, Kheri, United Provinces."

32501. "Reg. No. 32501. From Chandeswa, Sitapur, United Provinces."

32502. "Reg. No. 32182. From Bhagantipur, Sitapur, United Provinces."

32491 to 32655—Continued.**32491 to 32598—Continued.****32491 to 32533—Continued.**

- 32503.** "Reg. No. 32183. From Nimkhar, Sitapur, United Provinces."
- 32504.** "Reg. No. 32184. From Kauta, Unao, United Provinces."
- 32505.** "Reg. No. 32185. From Lalopur, Unao, United Provinces."
- 32506.** "Reg. No. 32186. From Mahanadpur, Unao, United Provinces."
- 32507.** "Reg. No. 32187. From Sanksoha, Basantpur, Futteghur, United Provinces."
- 32508.** "Reg. No. 32188. From Bahndolpur, Futteghur, United Provinces."
- 32509.** "Reg. No. 32189. From Khera Khurd, Mainpuri, United Provinces."
- 32510.** "Reg. No. 32190. From Lakhoura, Mainpuri, United Provinces."
- 32511.** "Reg. No. 32191. From Mainpuri, United Provinces."
- 32512.** "Reg. No. 32192. From Jaimoi, Mainpuri, United Provinces."
- 32513.** "Reg. No. 32193. From Nasipur, Mainpuri, United Provinces."
- 32514.** "Reg. No. 32194. From Tiswahisor, Hurdoi, United Provinces."
- 32515.** "Reg. No. 32195. From Atwa Karsot, Hurdoi, United Provinces."
- 32516.** "Reg. No. 32196. From Sanwaria, Hurdoi, United Provinces."
- 32517.** "Reg. No. 32197. From Aslapur, Hurdoi, United Provinces."
- 32518.** "Reg. No. 32198. From Jaipura, Hurdoi, United Provinces."
- 32519.** "Reg. No. 32199. From Naira, Hurdoi, United Provinces."
- 32520.** "Reg. No. 32200. From Barch, Etawah, United Provinces."
- 32521.** "Reg. No. 32201. From Bhoiya, Etawah, United Provinces."
- 32522.** "Reg. No. 32202. From Karayee, Etawah, United Provinces."
- 32523.** "Reg. No. 32203. From Nangawan, Etawah, United Provinces."
- 32524.** "Reg. No. 32204. From Etawah, United Provinces."
- 32525.** "Reg. No. 32205. From Etawah, United Provinces."
- 32526.** "Reg. No. 32209. From Shikohabad, United Provinces."

32491 to 32655—Continued.**32491 to 32598—Continued.****32491 to 32533—Continued.**

32527. "Reg. No. 32210. From Bewar, United Provinces."

32528. "Reg. No. 32211. From Lakhimpur, United Provinces."

32529. "Reg. No. 32212. From Langawar, United Provinces."

32530. "Reg. No. 32213. From Panhar, United Provinces."

32531. "Reg. No. 32399. From Jaunpur, United Provinces."

32532. "Reg. No. 32874. *Bhatmas*. From Darjiling."

32533. "Reg. No. 31565. From Kalimpong, Darjiling."

32534 to 32538. "Black, speckled with brown. In size and shape the seed is identical with S. P. I. Nos. 32491 to 32533."

32534. "Reg. No. 31785. From Poona, Bombay. Black, very similar to *Nuttall*, S. P. I. No. 17253."

32535. "Reg. No. 34013. From Gurhwal, United Provinces."

32536. "Reg. No. 32206. From Chakrata, Dehra Dun, United Provinces."

32537. "Reg. No. 32030. From Kashmir."

32538. "Reg. No. 31704. From Simla, Punjab."

32539 to 32541. "These are brown with medium-sized seed and very similar to S. P. I. No. 20011B."

32539. "Reg. No. 32208. From Chakrata, Tahsil, Dehra Dun, United Provinces."

32540. "Reg. No. 32372. From Kashmir."

32541. "Reg. No. 31702. From Simla, Punjab."

32542. "Reg. No. 31567. From Kalimpong, Darjiling. Brown, similar to S. P. I. No. 24673."

32543. "Reg. No. 32873. From Darjiling; very similar to S. P. I. No. 32542."

32544. "Reg. No. 32032. From Kalimpong, Darjiling. Brown, quite similar to S. P. I. No. 17258."

32545. "Reg. No. 31701. From Kangra, Punjab. Seed olive yellow, small, much flattened, with burnt-umber hilum."

32546. "Reg. No. 32870. *Bhatmas*. From Darjiling. Olive yellow, medium small with burnt-umber hilum."

32547. "Reg. No. 32872. *Bhatmas*. From Darjiling. Straw yellow, medium small, much flattened, hilum russet colored."

32548. "Reg. No. 32543. From Kilburn & Co., Calcutta. Olive yellow, identical with S. P. I. No. 26160."

32549. "Reg. No. 31787. From Poona, Bombay. This sample contains olive-yellow seed, similar to S. P. I. No. 19186, and straw-yellow seed, very similar to S. P. I. No. 17273."

32550. "Reg. No. 32265. From Kachin Hills, Burma. Straw colored with very small flattened seed, and hilum burnt umber."

32551. "Reg. No. 31568. From Kalimpong. Olive yellow with dark-brown hilum; similar to S. P. I. No. 24704 in size and shape."

32491 to 32655—Continued.

32491 to 32598—Continued.

32552. "Reg. No. 31781. From Poona, Bombay. Olive yellow, with slate-colored hilum; similar in size and shape to S. P. I. No. 24704."
32553. "Reg. No. 31790. From Poona, Bombay. Very similar to S. P. I. No. 26160."
32554. "Reg. No. 31782. From Poona, Bombay. Very similar to S. P. I. No. 32552."
32555. "Reg. No. 32406. From a Chinese dealer of Tiretti Bazaar, Calcutta. Very similar to S. P. I. No. 26160."
32556. "Reg. No. 31703. From Simla, Punjab. Quite similar to S. P. I. No. 22901."
32557. "Reg. No. 31617. From Shillong. Straw yellow and brown seed. Identical with S. P. I. No. 24672."
32558. "*Bhatmas*. Reg. No. 32871. From Darjiling. Straw yellow with very dark-brown hilum; similar to S. P. I. No. 24697 in size and shape."
32559. "Reg. No. 31615. From Bhamo, Burma. Straw yellow, very similar to S. P. I. No. 17269."
32560. "Reg. No. 31779. From Poona, Bombay. Straw yellow, very similar to S. P. I. No. 17269."
32561. "Reg. No. 31778. From Poona, Bombay. Straw yellow, identical with S. P. I. No. 32560."
32562. "Reg. No. 31786. From Poona, Bombay. Straw yellow, seed identical with S. P. I. No. 24702."
32563. "Reg. No. 32405. From Chinese dealer of Tiretti Bazaar, Calcutta. Straw yellow, seed quite similar to S. P. I. No. 17278."
32564. "Reg. No. 31776. From Poona, Bombay. Straw yellow, very similar to S. P. I. No. 24696."
32565. "Reg. No. 31777. From Poona, Bombay. Straw yellow, identical with S. P. I. No. 32564."
32566. "Reg. No. 32583. From Madras Museum, Government farm, Trivandrum. Straw yellow, very similar to S. P. I. No. 24699."
32567. "Reg. No. 31789. From Poona, Bombay. Straw yellow, identical with S. P. I. No. 24699."
32568. "Reg. No. 31780. From Poona, Bombay. Straw yellow, very similar to S. P. I. No. 24899."
32569. "Reg. No. 31783. From Poona, Bombay. Straw yellow, identical with S. P. I. No. 24702."
32570. "Reg. No. 31788. From Poona, Bombay. Straw yellow, identical with S. P. I. No. 24696."
32571. "Reg. No. 31619. From Lashio, Hsenwi State, Northern Shan States, Burma. Straw yellow, very similar to S. P. I. No. 32559."
32572. "*Sudawpa*. Reg. No. 31173. From Ruby Mines, Upper Burma. Straw yellow, nearly identical with S. P. I. No. 17269."

32491 to 32655—Continued.**32491 to 32598—Continued.**

- 32573.** "Reg. No. 31784. From Poona, Bombay. Straw yellow. Very similar to S. P. I. No. 14954."
- 32574.** "*Pe-nga-pi*. Reg. No. 32043. From Lashio, Northern Shan States, Burma. Straw yellow, with very small seed elliptical in shape and hilum russet colored."
- 32575.** "Reg. No. 32214. From Myitkyina, Burma. Straw yellow, identical with S. P. I. No. 30574."
- 32576.** "Reg. No. 31803. From Naga Hills, Assam. Straw yellow, very similar to S. P. I. No. 14954."
- 32577.** "Reg. No. 31803. From Naga Hills, Assam. Straw yellow, identical with S. P. I. No. 30576."
- 32578.** "Reg. No. 31626. From Tiddim, Chin Hills, Burma. Straw yellow, very similar to S. P. I. No. 24674."
- 32579.** "Reg. No. 31566. From Kalimpong. Straw yellow, identical with S. P. I. No. 24674."
- 32580.** "Reg. No. 31569. From Kalimpong. Straw yellow, very similar to S. P. I. No. 24674."
- 32581.** "Reg. No. 32216. From Myitkyina, Burma. Straw yellow, very similar to S. P. I. No. 32580."
- 32582.** "Reg. No. 31252. *Pyin*. From Maubin, Lower Burma. Straw yellow, with small seeds much flattened and brown hilum."
- 32583.** "Reg. No. 31251. From Katha, Burma. Straw yellow, identical with S. P. I. No. 32582."
- 32584.** "Reg. No. 32075. From Myitkyina, Burma. Straw yellow, with brown hilum, similar to S. P. I. No. 32574, in size and shape."
- 32585.** "Reg. No. 31426. From Nagpur, Central Provinces. Straw yellow, very similar to S. P. I. No. 32582."
- 32586.** "Reg. No. 32217. From Myitkyina, Burma. Straw yellow, very similar to S. P. I. No. 32584."
- 32587.** "Reg. No. 31249. From Thaton, Upper Burma. Straw yellow, very similar to S. P. I. No. 32584."
- 32588.** "Reg. No. 32215. From Myitkyina, Burma. Straw yellow, very similar to S. P. I. No. 32584."
- 32589.** "Reg. No. 31616. From Lower Chindwin, Burma. Straw yellow, similar to S. P. I. No. 32584."
- 32590.** "Reg. No. 32074. From Katha, Burma. Straw yellow, similar to S. P. I. No. 32580."
- 32591.** "Reg. No. 31614. From Mandalay, Burma. Straw yellow, similar to S. P. I. No. 32580."
- 32592.** "Reg. No. 32592. From Gurhwal, United Provinces. Straw yellow, similar to S. P. I. No. 32580."
- 32593.** "Reg. No. 31574. From Haka, Chin Hills, Burma. Straw yellow, identical with S. P. I. No. 24672."
- 32594.** "Reg. No. 32029. From Kashmir. Straw yellow, identical with S. P. I. No. 22901."

32491 to 32655—Continued.**32491 to 32598—Continued.**

32595. "Reg. No. 32373. From Kashmir. Straw yellow, identical with S. P. I. No. 32594."

32596. "Reg. No. 32012. Yields 12.55 per cent of oil. From Gurhwal, United Provinces. Straw yellow (cloudy), in size and shape similar to S. P. I. No. 32594."

32597. "Reg. No. 31250. *Pe-kyat* or *Pe-bok*. From Mandalay. Straw yellow, very similar to S. P. I. No. 32580."

32598. "Reg. No. 32207. From Chakrata, Tahsib, Dehra Dun, United Provinces. Straw yellow, very similar to S. P. I. No. 32596."

32599 to 32605. PHASEOLUS CALCARATUS Roxb.

32599. "Reg. No. 31806. From Naga Hills, Burma. Mottled."

32600. "Reg. No. 31808. From Kerhn, Naga Hills, Burma. Brown."

32601. "Reg. No. 31708. From Myitkyina, Burma. Brown."

32602. "Reg. No. 32396. From Kerhn, Naga Hills, Burma. Mottled."

32603. "Reg. No. 31709. From Myitkyina, Burma. Black."

32604. "Reg. No. 32031. From Kashmir, India. Black."

32605. "Mashyan. Reg. No. 32878. From Darjiling. Brown."

32606. PHASEOLUS RADIATUS L.

"Mashyan. Reg. No. 32880. From Darjiling. Maroon."

32607. PHASEOLUS RADIATUS L.

"Reg. No. 32877. From Darjiling. Mottled."

32608. PHASEOLUS MAX L.

"Bought on the market at Trichinopoly, August 31, 1911. (No. 68.)"

32609. VIGNA CYLINDRICA (Stickman) Skeels.**Catjang.**

(*Phaseolus cylindricus* Stickman, 1759, Herbarium Amboinense, in Linnæus's *Amœnitates Academicæ*, vol. 4, p. 132.)

The catjang bean has heretofore been listed in the inventories as *Vigna catjang* (Burm.) Walpers, 1839 (Linnæa, vol. 13, p. 533), which was based on *Dolichos catjang* published in 1768 by N. L. Burmann (Flora Indica, p. 161.) However, Stickman in 1759 had published the name *Phaseolus cylindricus* for the plant described and figured by Johannes Burmann (Rumph's Herbarium Amboinense, vol. 5, 1747, p. 383, pl. 139, fig. 1), which is cited under *Dolichos catjang* by N. L. Burmann. It is therefore necessary to use the specific name *cylindricus* for the catjang bean.

"Bought on the market at Trichinopoly, August 31, 1911. (No. 65.) Clay."

32610. DOLICHOS LABLAB L.**Bonavist bean.**

"Bought on the market at Trichinopoly, August 31, 1911. (No. 67.) White."

32611. DOLICHOS LABLAB L.**Bonavist bean.**

"Bought on the market at Trichinopoly, August 31, 1911. (No. 66.) Buff."

32612. DOLICHOS BIFLORUS L.

"From the market at Trichinopoly, August 11, 1911. (No. 70.)"

32491 to 32655—Continued.

32613. *SYNTERISMA CONSANGUINEA* (Gaud.) Skeels.

(*Digitaria consanguinea* Gaudichaud, 1826, in Freycinet, Voyage Autour du Monde, Botanique, p. 410.)

The seeds of this grass, received as an unidentified *Syntherisma*, prove to be those of the species *consanguinea*. This species seems not to have been given a binomial name under the genus *Syntherisma*, the proper designation for the grasses sometimes known as *Digitaria*.

"A slender species growing in the Calcutta Botanical Gardens in great abundance. (No. 103, September 8, 1911.)"

Distribution.—This was first found in the Hawaiian Islands, and is now known to grow in the Malay Archipelago and in Polynesia.

32614. *MNESITHEA LAEVIS* (Retz.) Kunth.

"A slender, erect species, abundant in the Calcutta Botanical Gardens. (No. 102, September 8, 1911.)"

Distribution.—Southern Asia, extending from Afghanistan eastward to Ceylon and Burma, and through the Malay Archipelago to Java.

32615 to 32621. *STIZOLOBIUM* spp.

"Most of these forms were included by Hasskarl under the name *Mucuna velutina*, but their exact botanical relations remain to be established. Secured from the agricultural experiment station, Buitenzorg, Java."

32615. "Seeds ashy with indefinite smoky spots."

32616. "Seeds pale greenish."

32617. "Seeds greenish buff."

32618. "Seeds liver colored."

32619. "Seeds black."

32620. "Seeds brownish marbled and speckled with brown and black."

32621. "Seeds ash gray, marbled and speckled with brown and black."

32622 to 32631. *VIGNA SESQUIPEDALIS* (L.) W. F. Wight.

"Seeds received from Java, November, 1911."

32622. "*Glejor*. Brown, very similar to S. P. I. No. 21561."

32623. "*Tjinde*. Brown, identical with S. P. I. No. 32622."

32624. "*Pandjang*. Brown, very similar to S. P. I. No. 32623."

32625. "*Agel*. Brown, identical with S. P. I. No. 32624."

32626. "*Kroepoek*. Brown, lighter than S. P. I. No. 32625."

32627. "*Poejoek*. Brown, identical with S. P. I. No. 32626."

32628. "*Oesves*. Brown, identical with S. P. I. No. 32626."

32629. "*Dadap*. Black."

32630. "*Palembang*. Black."

32631. "*Roedjii*. Black."

32632 to 32638. *VIGNA SINENSIS* (Turner) Savi.

Cowpea.

"From Java. Received November, 1911."

32632. "*Roedjii*. Reddish brown, quite similar to S. P. I. No. 17369, but seeds smaller."

32491 to 32655—Continued.

32632 to 32638—Continued.

32633. "*Dadap*. Reddish brown, identical with S. P. I. No. 32632."

32634. "*Dadap*. Yellowish, quite similar to S. P. I. No. 29282."

32635. "*Roedjii*. Yellowish, very similar to S. P. I. No. 21509A."

32636. "Originally from Marseille. Very similar to S. P. I. No. 17425."

32637. "*Blackeye*, identical with S. P. I. No. 21297."

32638. "*No. 5 Groeboeg*. Speckled reddish brown."

32639 to 32655. "Seed received from Java, November, 1911."

32639. *VIGNA CYLINDRICA* (Stickman) Skeels.

Catjang.

"*Mantri*. Browneye."

32640 to 32644. *PHASEOLUS CALCARATUS* Roxb.

32640. "*Katjang Kajoe Aro*. Black."

32641. "*Katjang Kajoe Aro*. Brown."

32642. "*Katjang Kajoe Aro*. Mottled."

32643. "*Katjang Kajoe Aro*. Mottled, but more of a reddish brown color."

32644. "*Katjang Kajoe Aro*. Light brown."

32645. *CANAVALI GLADIATUM* (Jacq.) DC.

Sword bean.

"*Reuzen Canavallia*. Red."

32646. *CANAVALI GLADIATUM* (Jacq.) DC.

Sword bean.

"*Reuzen Canavallia*. Yellow."

32647. *CANAVALI ENSIFORME* (L.) DC.

Jack bean.

32648. *GLYCINE HISPIDA* (Moench) Maxim.

Soy bean.

"Dull black, identical with S. P. I. No. 16790B, a selection from *Cloud*, S. P. I. No. 16790."

32649. *GLYCINE HISPIDA* (Moench) Maxim.

Soy bean.

"Straw yellow, very similar to S. P. I. No. 24695."

32650. *CRACCA VILLOSA HIRTA* (Hamil.) Kuntze.

Distribution.—Throughout the plains of India from the base of the Himalayas to Ceylon and Malakka and eastward through the Malay Archipelago to Java.

32651. *CLITORIA LAURIFOLIA* Poir.

Distribution.—A suberect undershrub found in Brazil and northward to Colombia, and in the West Indies; also in Malakka and Java.

32652. *CASSIA PATELLARIA* DC.

Distribution.—A herbaceous perennial found in the vicinity of Orizaba in southern Mexico and southeastward through Central America to the northern part of South America; also in the West Indies.

32653 to 32655. *ANDROPOGON SORGHUM* (L.) Brot.

32653. "Black."

32654. "Red."

32655. "Dark red."

32656. DIOSPYROS KAKI L. f.**Persimmon.**

From Ormond, Fla. Presented by Mr. James P. Vining, Bretton Inn. Received February 2, 1912.

Ormond Winter. Fruits of this variety were received in the middle of January. They were of excellent flavor and one among the lot was found to be seedless.

Cuttings.

32657 to 32659.

From Bombay, India. Purchased from Ralli Bros. Received January 30, 1912.

Seeds of the following:

32657. DOLICHOS BIFLORUS L.

"*Kulthi.*"

32658. PHASEOLUS ACONITIFOLIUS Jacq.

"*Muth.*"

32659. VIGNA CYLINDRICA (Stickman) Skeels.**Catjang.**

"*Chowli.*"

32660. RADICULA ARMORACIA (L.) Robinson.**Horse-radish.**

From Moscow, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, February 2, 1912.

"(No. 1020, January 8, 1912.) A variety of horse-radish, coming from Soosdal, Vladimir Government, Russia, famous throughout the country for its fine qualities and said to be the best horse-radish in Europe. Is in special demand in Russia during the winter holidays. To be tested in the northern United States in deep, rich soil." (*Meyer.*)

32661. TRITICUM AESTIVUM L.**Wheat.**

From Njoro, British East Africa. Presented by Mr. W. G. Sewall. Received January 23, 1912.

Rieti.

32662 to 32676.

From Kozlov, Tambov Government, Russia. Received through Mr. Frank N. Meyer, agricultural explorer, January 29, 1912.

Cuttings of the following:

32662. AMYGDALUS NANA × DAVIDIANA.

From Kozlov, Tambov Government, Russia.

"(No. 1005, December 27, 1911.) This species was originated by Mr. I. V. Mijurin at Kozlov, with the idea of creating a perfectly hardy peach, able to withstand the severe climate of central Russia. This hybrid produces non-edible fruits and has the characteristic growth of *Amygdalus davidiana*, while the form and appearance of the fruit is more or less that of *A. nana*. Said to be very floriferous and extremely showy in springtime. Possesses value as an ornamental tall shrub for the northern United States and may serve as a hybridization factor in creating races of perfectly hardy peaches, as Mr. Mijurin's experiences were that while *A. davidiana* and *A. nana* do not hybridize with *A. persica*, this hybrid does." (*Meyer.*)

32662 to 32676—Continued.

32663. PRUNUS ARMENIACA L.

Apricot.

From Kozlov, Tambov Government, Russia.

"(No. 1006, December 27, 1911.) An apricot originated by Mr. I. V. Mijurin in Kozlov, said to bear large, yellowish fruits of good flavor. Withstands unprotected the severe climate of central Russia and is probably the hardiest variety of apricot known. Of unusual value as a novel hardy fruit for the northern United States." (Meyer.)

32664. PRUNUS FRUTICOSA Pallas.

From Kozlov, Tambov Government, Russia.

"(No. 1007, December 27, 1911.) A variety of Siberian cherry, said to bear very abundantly, fruits of large size. Originated by Mr. I. V. Mijurin in Kozlov. Of high value like preceding number." (Meyer.)

32665. PRUNUS FRUTICOSA Pallas.

From Kozlov, Tambov Government, Russia.

"(No. 1008, December 27, 1911.) A variety of Siberian cherry, of very dwarf growth, and bears sweet fruits, which is a great rarity among this species. Originated by Mr. I. V. Mijurin in Kozlov. Of high value like the preceding numbers." (Meyer.)

32666. SORBUS AUCUPARIA × AMERICANA.

Rowan.

From Kozlov, Tambov Government, Russia.

"(No. 1009, December 27, 1911.) A rowan bearing large, sweet-flavored fruits of dark-red color, which are said to be pleasant eating. Originated by Mr. I. V. Mijurin at Kozlov. Of special value like No. 1006 (S. P. I. No. 32663)." (Meyer.)

32667. RIBES AUREUM Pursh.

Golden currant.

From Kozlov, Tambov Government, Russia.

"(No. 1010, December 27, 1911.) A variety of currant said to bear large fruits of good, sweet flavor, ranging in colors from dark purple to pale yellow. Extremely hardy, thriving on even the poorest soils. Originated by Mr. I. V. Mijurin at Kozlov. Of particular value for the northern sections of the United States." (Meyer.)

32668. ROSA SPINOSISSIMA × RUGOSA.

Rose.

From Kozlov, Tambov Government, Russia.

"(No. 1011, December 27, 1911.) A rose of low, dense growth and exceptionally hardy. Flowers said to be large and of a pale-rose color. Originated by Mr. I. V. Mijurin at Kozlov. Of special value for the northern United States." (Meyer.)

32669. PRUNUS SPINOSA × DOMESTICA.

Plum.

From Kozlov, Tambov Government, Russia.

"(No. 1012, December 28, 1911.) A plum, being a hybrid between *Prunus spinosa* and *P. domestica*, Green Reine Claude variety. Originated by Mr. I. V. Mijurin at Kozlov and temporarily named by him *Bjeli Tjorn*, meaning white sloe. Fruits almost round, medium size, of yellowish white color, and good keeping qualities. Trees of medium size, rather slow in growth, but are heavy bearers and exceptionally hardy. Of high value for the colder sections of the United States." (Meyer.)

32662 to 32676—Continued.

32670. PRUNUS SPINOSA × DOMESTICA.

Plum.

From Kozlov, Tambov Government, Russia.

"(No. 1013, December 28, 1911.) A plum of the same parentage as the preceding numbers. Originated by Mr. I. V. Mijurin at Kozlov, and temporarily named by him *Dessertnaia Tjorn Chorny*, meaning black dessert sloe. Fruits dark purple, not very large, of sweet, characteristic spicy flavor, and possessing good keeping and shipping qualities. Trees of vigorous growth. Of high value like the preceding number." (Meyer.)

32671. PRUNUS SPINOSA × DOMESTICA.

Plum.

From Kozlov, Tambov Government, Russia.

"(No. 1014, December 28, 1911.) A plum of the same parentage as the preceding numbers. Originated by Mr. I. V. Mijurin at Kozlov and temporarily named by him *Tjorn Sladky Chorny*, meaning sweet black sloe. Fruits of a dark-purplish color, medium size, and having a very sweet flavor, with an after-taste all their own. The trees are very productive and of vigorous growth. Of high value like the preceding numbers." (Meyer.)

Seed received under S. P. I. No. 32424.

32672. PRUNUS SPINOSA × DOMESTICA.

Plum.

From Kozlov, Tambov Government, Russia.

"(No. 1015, December 28, 1911.) A plum of the same parentage as the preceding numbers. Originated by Mr. I. V. Mijurin at Kozlov, and temporarily named by him *Zimni Tjorn Chorny*, meaning black winter sloe. Fruits of dark-purple color, medium size, of sweet, spicy flavor, and possessing admirable keeping and shipping qualities, lasting as long as three months. They do not drop easily from the trees even when fully ripe. Trees of vigorous, rather tall growth, and very hardy. Of high value like the preceding numbers." (Meyer.)

32673. PRUNUS SPINOSA × DOMESTICA.

Plum.

From Kozlov, Tambov Government, Russia.

"(No. 1016, December 28, 1911.) A plum of the same parentage as the preceding numbers. Originated by Mr. I. V. Mijurin at Kozlov and temporarily named by him *Reine Claude Zolotisti*, meaning Golden Reine Claude. Fruits of medium size and a beautiful yellow color; shape spherical, slightly flattened; juicy; taste sweet and spicy. Of good keeping and shipping qualities and considered an excellent market variety. Trees of medium growth, very healthy and cold resistant. Of high value like the preceding numbers." (Meyer.)

32674. PRUNUS AVIUM L.

Cherry.

From Kozlov, Tambov Government, Russia.

"(No. 1017, December 28, 1911.) A variety of cherry originated by Mr. I. V. Mijurin at Kozlov, and named by him *Knyashnaia Severa*, meaning Queen of the North. Fruits large, of pale-red color, and fresh sour-sweet flavor, ripening toward the end of June; possesses excellent shipping and keeping qualities and persists on the trees even when over ripe. Trees of vigorous, straight growth, making but few side branches; trunks smooth and clean. This variety seems to give special satisfaction in dry, cold climates like, for instance, that of Samara Government, Russia, where cherries as a rule grow very poorly. It is considered in Russia to be a decided acquisition to their hardy fruit trees and will no doubt be found of special value in the northern sections of the United States." (Meyer.)

32662 to 32676—Continued.**32675. CYDONIA OBLONGA Miller.****Quince.**

From Kozlov, Tambov Government, Russia.

"(No. 1018, December 28, 1911.) A quince selected by Mr. I. V. Mijurin at Kozlov; is able to withstand successfully the severe climate of central Russia, where quinces ordinarily perish when the thermometer drops to -20° C. (-4° F.) This variety has stood -35° C. (-31° F.) and remained unhurt. Fruits medium size, of oblong shape. Valuable as a home fruit for the northern United States." (*Meyer.*)

32676. CYDONIA OBLONGA Miller.**Quince.**

From Kozlov, Tambov Government, Russia.

"(No. 1019, December 28, 1911.) A variety of quince selected by Mr. I. V. Mijurin at Kozlov, bearing medium-sized, round fruits. For further remarks see the preceding number." (*Meyer.*)

32678. AMYGDALUS PERSICA NECTARINA Ait.**Nectarine.**

Grown at the Plant Introduction Field Station, Chico, Cal. Numbered February, 1912.

Crosby. Same as S. P. I. No. 11777, budded on *Amygdalus davidiana*, S. P. I. No. 26604.

32679. MYRCIARIA EDULIS (Vell.) Skeels.

From Paraguay. Presented by Dr. Moisés S. Bertoni, Estacion Agronomica, Puerto Bertoni. Received February 3, 1912.

"*Ih va hai.*"

32680 to 32689. TRITICUM spp.**Wheat.**

From Argentina. Presented by Dr. Carlos Thays, Director, Botanic Garden, Buenos Aires. Received January 30, 1912.

Seeds of the following; quoted notes by Dr. Thays:

32680. TRITICUM DURUM Desf.

"*Tangaro.* Cultivated in the central pampas. Production 1,900 kilos [about 2 tons] per hectare [2.47 acres]."

32681 to 32689. TRITICUM AESTIVUM L.

32681. "*Barleta.* Cultivated in the southern part of the province of Buenos Aires. Production 1,440 kilos per hectare."

32682. "*French Red.* From the western part of the province of Buenos Aires. Yield 1,550 kilos per hectare."

32683. "*Tusella.* From central pampas. Yield 1,480 kilos per hectare."

32684. "*Barleta.* From Chubut. Yield 1,900 kilos per hectare."

32685. "*Barleta.* From the south of Cordoba. Yield 1,690 kilos per hectare."

32686. "*Australian.* From southern Santa Fe. Yield 1,380 kilos per hectare."

32687. "*Hungarian.* From central pampas. Yield 1,290 kilos per hectare."

32688. "*Barleta.* From Rio Negro. Yield 1,320 kilos per hectare."

32689. "*French.* From southern San Luis. Yield 1,550 kilos per hectare."

32691 to 32694. PERSEA spp.

From the State of Pueblo, Mexico. Presented by Mr. William W. Canada, American consul, Vera Cruz. Received February 3, 1912.

Seeds of the following:

32691. PERSEA AMERICANA Miller.

Avocado.

32692. PERSEA MEXICANA (Meissn.) Hemsl.

Distribution.—The province of Vera Cruz in southern Mexico.

32693. PERSEA sp.

32694. PERSEA LINGUE (Ruiz and Pav.) Nees.

See No. 24208 for description.

32695. PHASEOLUS VULGARIS L.

Bean.

From Paraguay. Presented by Dr. Moisés S. Bertoni, Estacion Agronomica, Puerto Bertoni. Received February 3, 1912.

32696. ANACARDIUM OCCIDENTALE L.

Cashew.

From State of Rio de Janeiro, Brazil. Presented by Mr. R. E. Demaret, Sao Paulo. Forwarded by Mr. C. A. Lull, Tiffin, Ohio. Received February 1, 1912.

See No. 5202 for description.

Seeds.

32697 to 32702.

From Chelsea, London, England. Purchased from James Veitch & Sons (Ltd.). Received February 5, 1912.

Plants of the following; quoted notes by James Veitch & Sons:

32697. ROSA WILLMOTTIAE Hemsl.

Rose.

"A very pretty species with single, rosy carmine flowers, 1 inch to 1½ inches in diameter, which are freely produced during June. Very distinct from any other rose in cultivation."

Distribution.—On the slopes of the Sangpan Mountains near the Tibetan frontier of western China, at an elevation of 9,500 to 11,000 feet.

32698. BERBERIS POLYANTHA Hemsl.

Barberry.

"A deciduous shrub, 5 to 6 feet high, with yellow flowers, followed by coral-red fruits. Bright-green obovate leaves borne in clusters of about eight each."

Distribution.—Collected in western China.

32699. BERBERIS VERRUCULOSA Hemsl. and Wilson.

Barberry.

"A dense-growing evergreen shrub about 2 feet high. Leaves leathery, ovate, spiny, shining above, glaucous beneath. Flowers yellow, borne in pairs, succeeded by violet-purple fruits."

Distribution.—An evergreen shrub found on the mountains in the vicinity of Tatienu, in the Province of Szechwan, in China.

32700. BERBERIS JAPONICA BEALEI (Fortune) Skeels.

Barberry.

"Not far from the town of Tun Chee in the green-tea country of Hankow, China. A handsome evergreen species somewhat resembling *Berberis fremontii* of northern Texas." (Dr. W. Van Fleet.)

See No. 31244 for previous introduction.

32697 to 32702—Continued.**32701.** BERBERIS GAGNEPAINI C. K. Schneider.**Barberry.**

"An elegant evergreen barberry of compact growth, flowering freely during June in this country. The pale-yellow flowers are succeeded by glaucous purple berries."

Distribution.—Slopes of the mountains at an elevation of 10,000 feet in north-eastern India and western China.

32702. IRIS WILSONI C. H. Wright.**Iris.**

"A new species, resembling *Iris sibirica* in habit. Flowers pale yellow, outer segments veined red brown, borne on stems 8 to 12 inches high. First flowered in July, 1909, at Coombe Wood."

Distribution.—Known only from western China.

32703. CAMPOMANESIA sp.

From Puerto Bertoni, Paraguay. Presented by Dr. Moisés S. Bertoni, Estacion Agronomica. Received February 6, 1912.

"*Ithavira*."

32704 and 32705.

From Inhamban, Portuguese East Africa. Presented by Mr. Pliny W. Keys, Methodist Episcopal Mission. Received February 6, 1912.

Seeds of the following; quoted notes extracted from Sims's Forest Flora of Portuguese East Africa:

32704. GARCINIA sp.

"*Pembe*. Either a branched bush, an erect tree, or a bushy tree; in each case the stems set with numerous firm, little, more or less evergreen branches, which give the tree a pyramidal shape. Leaves usually in threes or opposite. Fruit 1 to 2 inches long, oblong, edible, yellow at first or when ripe, two seeded, and used by the natives to make a fermented liquor. Abundant in sandy soil through the M'Chopes country to Inhamban."

32705. STRYCHNOS GERRARDI N. E. Brown.

"*Quaqua*. A small tree, 3 to 10 meters high, without thorns, and with exceedingly variable leaves. Fruit one celled, globose, 5 to 7 centimeters in diameter, small, thin, spotted, with a hard shell, and numerous flat seeds lying in an acidulous edible pulp. Abundant from Natal to Inhamban, and especially on the sandy soils."

32706. ABIES NUMIDICA De Lannoy.

From Babois, Algeria. Presented by Dr. L. Trabut, Algiers, Algeria. Received February 6, 1912.

"This tree grows with the cedar. It is a very splendid tree, flourishing here at 1,800 meters." (*Trabut*.)

Distribution.—A tree, sometimes 75 feet high, found on the slopes of mountains at an elevation of 5,000 to 7,000 feet, in the Province of Constantine, in the northern part of Algeria.

32708 to 32712. ARALIA CORDATA Thunb.**Udo.**

From Yokohama, Japan. Purchased from L. Boehmer & Co. Received February 7, 1912.

Roots of the following:

32708. "*Shiro oku.*"

32711. "*Oku aka.*"

32709. "*Kan udo.*"

32712. "*Shiro wase.*"

32710. "*Wase aka.*"

32713 to 32725. PHOENIX DACTYLIFERA L.**Date.**

From Egypt. Procured through Mr. A. Aaronsohn, Managing Director, Jewish Agricultural Experiment Station, Haifa, Palestine. Received February 2, 1912.

"A collection of date palms secured from Upper Egypt by Mr. Aaronsohn under my direction. The object of the expedition was primarily to secure the *Wahi* date, of which specimens were secured by Mr. David Fairchild in 1900-1901. This name, as was pointed out by Mr. H. A. Rankin in 1904, is merely an English translation of the Arabic word meaning 'oasis date.' Mr. Rankin further suggests that the dates at Fayum, such as Mr. Fairchild secured, are probably from the oasis of Bahriyeh. Prof. G. Schweinfurth, of Berlin, informed me in July, 1911, that a large date by this name is imported into Egypt from the oasis of El Khargeh.

"Besides this variety, Mr. Aaronsohn hoped to get some of the fine Nubian varieties that have been reported by various travelers. In October, 1911, Mr. Aaronsohn found at Aswan trees of the *Wahi* variety which originally came from the oasis of Khargeh. He was unable to secure offshoots from these particular trees. Mr. Aaronsohn did, however, secure a number of offshoots of other varieties of considerable importance, as shown in the following list. The most important of these is probably the *Sultany*. If these offshoots prove true to name this one variety would undoubtedly repay the expense of the whole trip." (*Walter T. Swingle.*)

32713. "*Sukkoti.*"¹ This variety comes from the village of Sukka, in Nubia, and along with those of Say is said to be one of the best that grows on the banks of the Nile. Burckhardt (Nubia, ed. 2, p. 752) says: 'They are of the largest kind, generally 3 inches long. As there is no navigation northward through the Batn el Hadjar, these dates reach northern parts of Nubia only in small quantities at present.' The date is listed by Delchevalerie as a Nubian variety." (*Walter T. Swingle.*)

32714. "*Gundela.*"¹ This is probably the Gondaila of Fletcher's report in Bulletin No. 28 of the Department of Lands and Agriculture at Bombay, page 17. He states that it ripens in September, grows in sandy soil, and is a large, yellowish brown variety." (*Walter T. Swingle.*)

32715. "*Kilma*, or *Sultany.*"¹ According to Lipsius this is considered the best date in Nubia and is believed to keep for two years. This date, perhaps the most celebrated of the Nubian country, was formerly exported in some quantities through Egypt to Constantinople, where it is said to have gone to the Sultan's palace. It is perhaps the most famous of the Upper Egyptian varieties." (*Walter T. Swingle.*)

32716. "*Ibrimy.* A famous variety common in the district of Babir, and in Lower Nubia. It ripens in September and is a brown color. The fruit is said to resemble somewhat the carob in flavor." (*Walter T. Swingle.*)

¹ "Drying dates from Upper Egypt." (Aaronsohn.)

32713 to 32725—Continued.

32717. "*Hayany*. A variety from the town of Hayany in Upper Egypt. The dates are said by Delchevalerie to be made up into a paste and eaten by the inhabitants of that part of Egypt. See S. P. I. No. 6438." (*Walter T. Swingle*.)

32718. "*Siwi*."

32720. "*Bartamoda*."¹

32719. "*Adel Malakawi*."¹

32721. "*Amhat*. As to this variety there seems to be much confusion in the Egyptian literature, several varieties being undoubtedly confounded under the same name. Until the dates fruit it will be difficult to tell more about them." (*Walter T. Swingle*.)

32722. "*Zagloul*." See No. 6439 for description.

32723. "*Bint Aischa*." See No. 6440 for description.

32724. "*Amary*. Perhaps the same as *Amri* (S. P. I. 6445). The name would indicate a red date, which is a common date in Lower Egypt, frequently exported to Europe in a dry condition." (*Walter T. Swingle*.)

32725. "*Samany*." See No. 6441 for description.

32726. CITRUS sp.

From Hangchow, China. Presented by Mrs. J. H. Judson, Hangchow College. Received February 7, 1912.

32728. PROSOPIS STEPHANIANA (Bieb.) Kunth.

From Ayaba, Oued Rh'ir, south of Biskra, Algeria. Presented by Dr. L. Trabut, Algiers, Algeria. Received February 8, 1912.

"Grows on alkaline deserts." (*Trabut*.)

See No. 29996 for previous introduction.

32729. ARALIA CALIFORNICA S. Watson. California spikenard.

From California. Procured by Mr. G. P. Rixford, of the Bureau of Plant Industry, stationed in San Francisco. Received February 7, 1912.

Procured for breeding purposes. See No. 32169 for description.

32730. NITRARIA SCHOBERI L.

From Spencers Gulf, South Australia. Presented by Prof. J. H. Maiden, Director, Royal Botanic Garden, Sydney, New South Wales, Australia. Received February 8, 1912.

The following notes were written by Prof. Maiden, while standing opposite plants of *Nitraria schoberi* at Port Augusta at the northern end of Spencers Gulf, South Australia.

"Fruits the size of a small cherry with a narrowish, grooved stone. Very fleshy, translucent, and of a reddish brown color, remarkably like a Kentish cherry. Not at all bad eating, with a slight bitter flavor, not at all unpleasant."

32731. CHAETOCLOA MAGNA (Griseb.) Scribn. Wild millet.

From Millstone, Md. Collected by Mr. Ivar Tidestrom, of the Bureau of Plant Industry, September 1, 1911. Received February 8, 1912.

"This species, a large succulent annual, resembles the cultivated foxtail millet. It grows among shrubs and high herbs or in the open in mucky soil along the coast from Maryland southward. I am unable to say whether or not it can be grown in ordinary field soil, but it seems worthy of trial." (*A. S. Hitchcock*.)

¹ "Drying dates from Upper Egypt." (Aaronsohn.)

32733 to 32747. PYRUS COMMUNIS L.**Pear.**

From Collegeville, Minn. Presented by Rev. John B. Katzner, Superintendent, Trial Station, Minnesota State Horticultural Society, Collegeville. Received October, 1911. Numbered February 9, 1912.

Cuttings of the following varieties of pears, procured from Germany by Mr. Katzner; quoted notes by him:

- 32733.** "*Madam Favre*. A vigorous grower and a prolific bearer. Fruit large, of very good quality, suitable for dessert. Ripens in September."
- 32734.** "*Schoene Julie*. A prolific tree of good growth. Small fruit, very good quality, useful for dessert. Ripens in October."
- 32735.** "*Herzogin Elsa*. A prolific variety of good growth. Large fruit, very good quality, suitable for dessert. Ripens in September."
- 32736.** "*Beuckes Butterbirne*. A vigorous grower. Fruit, medium, very good quality, useful for dessert. Ripe in September."
- 32737.** "*Gute Louise von Avranches*. A very vigorous and prolific variety. Quite large fruit, very good to excellent quality, suitable for dessert. Ripe in October."
- 32738.** "*Magdalenebirne*. Vigorous and very prolific. Small fruit of very good quality, suitable for dessert. Ripe from July to August."
- 32739.** "*Gellerts Butterbirne*. A vigorous and very prolific variety. Large fruit of very good to excellent quality, which may be used for dessert."
- 32740.** "*Triumph von Viennes*. A vigorous and prolific variety. Fruit is one of the largest grown. It is of very good quality and is suitable for dessert. Ripe from September to October."
- 32741.** "*Amanlis Butterbirne*. Vigorous and very prolific. Large fruit of very good to excellent quality, suitable for dessert. Ripens in September."
- 32742.** "*Kuettelbirne*. Fruit ripe from November to January. Can be used for dessert and for cooking."
- 32743.** "*Philipp's Birne*." Same description as for No. 32735.
- 32744.** "*Trockener Martin*. Tree of good growth and very prolific. Small fruit which is very good for cooking. Ripe from December to March."
- 32745.** "*Baronsbirne*. A good bearer and grower. Large fruit, the very best for cooking purposes. Fruit ripe from January to April."
- 32746.** "*Hofratsbirne*. A very vigorous variety. Fruit large, of very good to excellent quality, suitable for dessert. Ripe from October to November."
- 32747.** "*Englische Sommerbirne*. A vigorous grower and prolific bearer. Fruit very good, useful for dessert. Ripens in September."

"All the above varieties I have tried. While they are not hardy with us, they showed no signs of blight and therefore may be very good for other parts in the United States, as in Michigan, eastern Wisconsin, and Eastern and Western States."

32748 and 32749. DIOSPYROS KAKI L. f.**Persimmon.**

From Sapporo, Japan. Presented by Mr. Y. Takahashi, botanist and vegetable pathologist, Hokkaido Agricultural Experiment Station. Received February 10, 1912.

Cuttings of the following:

- 32748.** Variety *Hachiya*. Japanese name *Ko shikaki*.
- 32749.** Variety *Hiyakume*. Japanese name *Hiyakume kaki*.

32750. DIOSPYROS KAKI L. f.**Persimmon.**

From Kawanishimura, Settsu, Japan. Presented by Mr. M. Kishimoto, Japan Nursery Co. (Ltd.) Received February 12, 1912.

"Scions from male persimmon trees." (*Kishimoto.*)

32751. PRUNUS sp.**Prune.**

From Langenbuhl, Thun, Berne, Switzerland. Presented by Mr. Felix Wenger. Received February 12, 1912.

Quoted note by Mr. R. Wenger, of Newberg, Oreg., who suggested the procuring of this prune.

"This prune resembles the Italian, but is much larger and contains more sugar. It is locally known as the 'grafted prune.' I have had considerable experience in prune growing in this State, and I am confident that if this prune would do as well here as it did at Langenbuhl, it would be of great benefit to the entire Northwest."

32752. FICUS ROXBURGHII Wallich.**Fig.**

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, Director, Royal Botanic Garden. Received February 12, 1912.

Distribution.—A middle-sized tree found on the lower slopes of the Himalayas in northern India, rising to an elevation of 6,000 feet and extending from the Province of Assam to the valley of the Indus River.

32753. PUNICA GRANATUM L.**Pomegranate.**

From Raleigh, N. C. Presented by Mr. William J. Andrews. Received February 10, 1912.

"Skin greenish yellow, with no red color, moderately thick. Dissepiment broad-triangular. Grains medium large, obovoid, beautifully carmine colored. Seeds large and hard. Very juicy and acid (too much so for eating without sugar). Large fruit well adapted for making sherbets, etc." (*T. H. Kearney.*)

32757 to 32774.

From Russia. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, February 16, 1912.

Seeds of the following:

32757. PRUNUS sp.**Plum.**

This and the next lot of seed were received under the name *Prunus ussuriensis*, but as yet the place of publication of this name has not been found.

From Souchodole, Tula Government, Russia.

"(No. 1727a, December 30, 1911.) A wild plum, from the Usuri district, eastern Siberia. Said to be of large size, red in color, and an early ripener. Considered to improve in flavor by being frozen. Obtained from Mr. D. D. Kashgaroff at Souchodole. Will probably thrive better in the eastern sections of the United States than in the Middle West." (*Meyer.*)

32758. PRUNUS sp.**Plum.**

From Souchodole, Tula Government, Russia.

"(No. 1728a, December 30, 1911.) A variety of wild plum coming from the Usuri district, eastern Siberia. Said to be of medium size and of a yellow color. Obtained like the preceding number." (*Meyer.*)

32757 to 32774—Continued.

32759. PRUNUS PADUS L.

Cherry.

From Souchodole, Tula Government, Russia.

"(No. 1729a, December 30, 1911.) A small-fruited species from the Usuri district, eastern Siberia. Grows in the jungle. Said to bear edible fruits. Obtained like the preceding number." (Meyer.)

32760. AMYGDALUS NANA L.

From Kozlov, Tambov Government, Russia.

"(No. 1730a, December 28, 1911.) A form of almond obtained from Mr. I. V. Mijurin at Kozlov; possibly a hybrid." (Meyer.)

32761. RIBES MEYERI Maxim.

Currant.

From Souchodole, Tula Government, Russia.

"(No. 1731a, December 30, 1911.) Variety *turkestanica*. A black currant coming from Russian Turkestan. Said to bear unusually large, fine-flavored fruits. Obtained from Mr. D. D. Kashgaroff at Souchodole." (Meyer.)

32762. RIBES PROCUMBENS Pallas.

Currant.

From Souchodole, Tula Government, Russia.

"(No. 1732a, December 30, 1911.) A species of currant called *Markakulskaja smarodnaia* from the Marka Kul region, Altai Mountains, southwestern Siberia. Said to bear berries of a brownish black color as large as cherries. Occurs on moist, cool places and apparently objects to drought and heat. To be tested in southern Alaska and in the moist, elevated regions of the United States. Obtained like the preceding number." (Meyer.)

Distribution.—The province of Dauria in eastern Siberia.

32763. CLEMATIS TANGUTICA (Maxim.) Korsh.

Clematis.

From Kozlov, Tambov Government, Russia.

"(No. 1733a, December 28, 1911.) An ornamental, climbing, woody clematis, bearing large, yellow flowers. Has proved to be perfectly hardy in central Russia. Obtained from Mr. I. V. Mijurin, who stated that he had received the seeds from Tibet." (Meyer.)

Distribution.—On the slopes of the mountains at an elevation of 11,000 to 13,000 feet in Tibet and Mongolia.

32764. LILIUM MONADELPHUM (var. SZOWITSIANUM) × ELEGANS.

From Kozlov, Tambov Government, Russia.

"(No. 1734a, December 28, 1911.) A lily originated by Mr. I. V. Mijurin at Kozlov; bears flowers of a deep-yellow color and is extraordinarily floriferous; apparently of great promise as an ornamental perennial for the hardy border. Bulbs of this hybrid are stated by Mr. Mijurin to weigh up to 6 pounds a piece." (Meyer.)

32765. TRITICUM AESTIVUM L.

Wheat.

From Kharkof, Russia.

"(No. 1735a, December 22, 1911.) A variety of bearded winter wheat called *Krassny osistaia*, much grown in southern Russia. Gives an abundant crop and stands winter cold and summer heat better than most other varieties. Obtained from Mr. P. V. Budrin, Director of the Kharkof Selection Station." (Meyer.)

32757 to 32774—Continued.

32766. TRITICUM AESTIVUM L.

Wheat.

From Kharkof, Russia.

"(No. 1736a, December 22, 1911.) A variety of beardless winter wheat, called *Krassny besostaia*, extensively grown in southern Russia and possessing much the same qualities as the preceding number. Obtained from the same source." (Meyer.)

32767. HORDEUM VULGARE L.

Barley.

From Rostov, Russia.

"(No. 1737a, December 19, 1911.) A new variety of black summer barley, called *Chorny gladko-osti*. First found at the agricultural experiment station in Taganrog, southern Russia. This is a decided improvement on the ordinary barleys with their hooked awns, which make them especially objectionable for feeding purposes. Obtained at the agricultural experiment station near Rostov, through Mr. S. M. Groobnieff, Secretary of the Don-Kuban-Tersk Agricultural Society. This barley seems to do well in regions with rather high summer temperatures and where there is only a relatively light precipitation. To be used exclusively for breeding purposes." (Meyer.)

32768. PANICUM MILLACEUM L.

Millet.

From Kharkof, Russia.

"(No. 1738a, December 22, 1911.) A variety of millet called *Chorny proso*. It has large, black seeds and is a medium-early ripener. In Kharkof it is considered to be the best variety. Obtained from Mr. P. V. Budrin, Director of the Agricultural Selection Station at Kharkof." (Meyer.)

32769. HELIANTHUS ANNUUS L.

Sunflower.

From Rostov, Russia.

"(No. 1739a, December 19, 1911.) A variety of sunflower called *Zelenka*, which has large, plump seeds, is cultivated for oil production exclusively, and is specially recommended as being more resistant to the ravages of orobanches than the ordinary varieties. Obtained like No. 1737a (S. P. I. No. 32767)." (Meyer.)

32770. PISUM SATIVUM L.

Pea.

From Moscow, Russia.

"(No. 1740a, January 10, 1912.) A tall-growing sugar pea, said to be a prolific bearer, with seeds that swell out in cooking and have a meaty flavor. Called *Merzeimski*, probably derived from the German name 'Meerheim.' Purchased in Moscow." (Meyer.)

32771 PISUM SATIVUM L.

Pea.

From Moscow, Russia.

"(No. 1741a, January 10, 1912.) A variety of garden pea called *Chorny-piati*; has black eyes. Said to be of tall growth and of ordinary quality. Purchased in Moscow." (Meyer.)

32772. PISUM SATIVUM L.

Pea.

From Moscow, Russia.

"(No. 1742a, January 4, 1912.) A variety of garden pea obtained from the originator, Mr. D. von Roodzinski, in charge of the Selection Station near Moscow; called by him *Stambovi-Petrowska-Razumowski*. An erect grower with fasciated stem. Is a prolific bearer; the flowering period is confined to

32757 to 32774—Continued.

four or five days, which results in uniform maturing of the crop. Mr. Roodzinski stated that this variety is 65 per cent more productive than the ordinary varieties of garden peas. Will apparently be of special value for the more northern regions of the United States. Mr. Roodzinski's number for this variety is 576." (*Meyer.*)

32773. LINUM USITATISSIMUM L.**Flax.**

From Moscow, Russia.

"(No. 1743a, January 4, 1912.) A variety of flax selected by Mr. D. von Roodzinski at Moscow for four years. A very tall, erect grower reaching a height of 105 centimeters [41 inches] in height. Called *Psowski* flax No. 802. Obtained from the originator." (*Meyer.*)

32774. CITRULLUS VULGARIS Schrad.**Watermelon.**

From Moscow, Russia.

"(No. 1744a, January 10, 1912.) A watermelon called *Monastirski arboos* said to be much grown in southern Russia as a market variety. Is round in shape and of medium size; has thin skin, light green in color, with dark encircling bands; the flesh is red and of very sweet taste; it is a medium-early ripener. Purchased in Moscow." (*Meyer.*)

32775 and 32776. POPULUS spp.**Poplar.**

From Slottsskogen, Gothenburg, Sweden. Received through Mr. Stuart J. Fuller, American consul, February 17, 1912.

Cuttings of the following:

32775. POPULUS TREMULA L.

See No. 30577 for previous introduction.

32776. POPULUS NIGRA L.

See No. 30055 for previous introduction.

32777 to 32783.

Procured by Mr. C. V. Piper, of the Bureau of Plant Industry. Received February 16, 1912.

Seeds of the following; quoted notes by Mr. Piper:

32777. CRACCA VILLOSA PURPUREA (L.) Kuntze.

"From the botanical gardens, Buitenzorg, Java. A legume that is being experimented with at the Buitenzorg garden as a green-manure crop. It possesses considerable promise for this purpose."

Distribution.—Throughout the plains of India, and generally scattered in the Tropics.

32778. CRACCA VILLOSA ARGENTEA (Lam.) Kuntze.

"A large, half-shrubby species, which is being experimented with at the Buitenzorg Botanic Garden, as a green-manure crop."

32779. MEIBOMIA PARVIFOLIA (DC.) Kuntze.

From Buitenzorg, Java.

"A legume, which closely resembles in appearance the Florida beggarweed and is probably of similar value."

Distribution.—Throughout the plains of India from the Himalayas, where it ascends to an elevation of 7,000 feet, to Ceylon, and eastward to China and Japan, and in the Malay Archipelago,

32777 to 32783—Continued.

32780. *BRADBURYA PUBESCENS* (Benth.) Kuntze.

"A leguminous vine being experimented with at Buitenzorg, Java, as a green-manure crop. It has much the habit of *Bradburya plumieri*."

32781. *APOCOPIS* sp.

"An unknown grass growing in the garden at Buitenzorg, Java, from seed collected in New Guinea. It apparently has considerable promise as a pasture grass for the extreme southern States."

32782. *INDIGOFERA LINIFOLIA* (L. f.) Retz.

From Pusa, India.

"An annual legume abundant throughout the upper Ganges Valley, and also in the Bombay Presidency, India. In some sections it is considered one of the best native legume varieties. It should succeed well under southern California conditions."

32783. *ZORNIA DIPHYLLA* (L.) Pers.

From Bangalore, India.

"An annual legume found throughout the upper Ganges Valley and in the Bombay Presidency, and of similar value to the preceding number."

32784 to 32826.

From Seharunpur, India. Presented by Mr. A. C. Hartless, Superintendent, Government Botanic Gardens, at the request of Mr. C. V. Piper of the Bureau of Plant Industry. Received February 8, 1912.

Seeds of the following; quoted notes by Mr. Piper:

32784. *ANDROPOGON HALEPENSIS* (L.) Brot.

"This is the variety of *Andropogon halepensis* common throughout the Ganges Valley. It is quite different from the ordinary variety of Johnson grass introduced into this country, having a much larger, looser, drooping panicle, but also having the same development of rootstocks and being equally weedy. It should be tested with care."

32785. *ARTEMISIA* sp.

This was received under the name *Artemisia jacobaeumviridis*, but as yet the place of publication of this name has not been found.

32786. *BAUHINIA PURPUREA* L.

"Very similar to *Bauhinia variegata* (S. P. I. No. 32787), but the flowers are red."

Distribution.—A medium-sized tree found in India from the foot of the western Himalayas to Ceylon, and eastward to China.

32787. *BAUHINIA VARIEGATA* L.

"A small tree, with butterfly-shaped leaves, and showy white flowers."

Distribution.—A tree found throughout India from the western Himalayas to Burma, and eastward to China.

32788. *BELOU MARMELOS* (L.) Lyons.

Bael.

32789. *BERBERIS ARISTATA* DC.

Barberry.

32790. *BISCHOFIA JAVANICA* Blume.

"What has been identified as this same species seems to have been introduced into Florida some time ago, and at Oneco there is a beautiful specimen which, although injured during the great freezes, has recovered and is now a very beautiful shade tree." (*David Fairchild*.)

32784 to 32826—Continued.

Distribution.—A roundheaded tree found in India from the tropical slopes of the Himalayas in Kumaon eastward and southward through the hills of the Dekkan Peninsula, and from Assam to Tenasserim, and in the Malay Archipelago and the Pacific islands.

32791. *BOMBAX MALABARICUM* DC.

Red silk-cotton tree.

32792. *BUTEA MONOSPERMA* (Lam.) Taub.

"A leguminous tree with very handsome foliage and producing a great abundance of orange-scarlet blossoms. It is deciduous, grows 30 to 35 feet high, and is rather wide spreading."

32793. *CALAMUS TENUIS* Roxburgh.

Rattan.

"One of the rattan palms."

Distribution.—A climbing palm found on the tropical slopes of the Himalayas from Kumaon eastward and southward through Bengal, Assam, Chittagong, and Sylhet to Burma, and extending to Cochin China.

32794. *CALLICARPA MACROPHYLLA* Vahl.

Distribution.—A shrub with wandlike branches and white berries, found in the northern and eastern parts of India

32795. *CALLISTEMON CITRINA* (Curtis) Skeels.

(*Metrosideros citrina* Curtis 1794, Botanical Magazine, vol. 7, pl. 260.)

The seeds of this ornamental myrtaceous shrub from Australia were received under the name *Callistemon lanceolatum* DC. 1828 (Prodromus, vol. 3, p. 223) which was based on *Metrosideros lanceolata* J. E. Smith 1797 (Transactions of the Linnean Society, vol. 3, p. 272). Dr. Smith cited "*M. citrina*. Curt., Mag. t. 260," and remarked in part as follows: "I would never change a name that has been generally in use, whether published or not; but this is too preposterous to be retained." As the present rules of botanical nomenclature require the retaining of the first specific name applied to a species, Curtis's name is here restored.

Callistemon citrina is found along streams and near the coast of the eastern part of Australia in Queensland, New South Wales, and Victoria.

32796. *CASSIA* sp.

32797. *CELTIS AUSTRALIS* L.

"A very splendid shade tree, growing to a height of 40 feet. It has a shapely crown, and the branches are somewhat pendulous. It is said to be a rapid grower."

Distribution.—A variable tree found in southern Europe, northern Africa, and eastward in Asia to India.

32798. *CINNAMOMUM CAMPHORA* (L.) Nees and Eberm.

Camphor.

32799. *DIOSPYROS MONTANA* Roxb.

"A small, erect, deciduous tree, growing to a height of about 30 feet. Is quite ornamental and useful where small trees are desirable."

32800. *DIOSPYROS PEREGRINA* (Gaertn.) Guerke.

"A vigorous species growing about 30 feet high with a dense, spreading habit. The round russet-colored fruits are very attractive, but are not eaten. These make a beautiful contrast with the bright glossy-green leaves."

32801. *DURANTA REPENS* L.

"A shrub growing to a height of 6 or 8 feet and covered with white or lavender flowers in drooping racemes, followed by an abundance of orange-colored

32784 to 32826—Continued.

berries. Frequently the bush bears blossoms and fruits at the same time. It also makes excellent hedges."

Distribution.—A small tree or shrub found in sandy soil in southern Florida, in the West Indies, and from Orizaba in Mexico southeastward to Peru and Brazil.

32802. EHRETIA ACUMINATA R. Br.

"A deciduous tree, rather dwarf, producing white flowers in abundance."

32803. ERYTHRINA VESPERTILIO Benth.

Heilaman tree.

Distribution.—A shrub or low tree found along streams in North Australia and Queensland.

32804. EUCALYPTUS SALIGNA Smith.

Couranga.

Distribution.—A tall tree with smooth, silver-gray, shining bark, found along streams in New South Wales, Australia.

32805. FICUS LUCESCENS Blume.

"A deciduous species, with compact habit, growing to a height of about 30 to 35 feet. It is said to grow very rapidly. Leaves bright glossy green."

Distribution.—A low tree found on the plains and lower hills of India and eastward through the Malay Archipelago to Java.

32806. FICUS RELIGIOSA L.

Pipal.

"The peepul tree. One of the most generally grown shade trees throughout India, is quite hardy, and is grown far north into the Punjab region. While it thrives best under moist conditions, it will nevertheless withstand much drought."

Distribution.—A tree found in the lower Himalayan forests in Bengal, and in central India; generally planted in India and Ceylon and the Malay Archipelago.

32807. GLEDITSIA FEROX Desf.

Distribution.—A tree with stiff, straight spines, found in the northern part of China; often cultivated as an ornamental.

32808. GMELINA ARBOREA Roxburgh.

"Native name *Khumbar*. Considerably grown as a shade tree in the upper Ganges Valley. Deciduous, growing 40 to 50 feet high, and with a round, compact crown. It should do well in southern California."

Distribution.—A large tree bearing dull-yellow flowers in panicles, found throughout India from the base of the Himalayas southward and eastward, and extending through the Malay Archipelago to the Philippines.

32809. HETEROPHRAGMA ADENOPHYLLUM (DC.) Seem.

"A very handsome shade tree with abundant yellow blossoms; much grown at Lucknow."

Distribution.—A medium-sized tree with stout panicles of large yellowish brown flowers, found in the eastern part of India, extending from eastern Bengal and Assam southward through Burma to Tenasserim and the Andaman Islands.

32810. HOLARRHENA ANTIDYSENTERICA (Roth) Wall.

Conessi.

Distribution.—A small tree found on the tropical slopes of the Himalayas and throughout the drier forests of India.

32784 to 32826—Continued.

32811. *HOLOPTELEA INTEGRIFOLIA* (Roxb.) Planchon. **Indian-elm.**

Distribution.—A large, spreading tree found in India from the lower ranges of the Himalayas southward and eastward to Ceylon and Cochin China.

32812. *KYDIA CALYCINA* Roxburgh.

Distribution.—A tree with large panicles of white or pink flowers, found in India from the tropical slopes of the Himalayas in Kumaon eastward to Burma and southward to the Coromandel Coast.

32813. *LAGERSTROEMIA PARVIFLORA* Roxburgh.

Distribution.—A tree with small white flowers found in India from the base of the western Himalayas southward throughout the Dekkan Peninsula.

32814. *LAGERSTROEMIA SPECIOSA* (L.) Persoon.

"A beautiful tree cultivated throughout India, producing a great abundance of beautiful purple flowers. It is closely related to the crape myrtle of the South, but the flowers are much larger and handsomer. It should succeed in Florida and southern California."

32815. *LANTANA* sp.

32816. *LEUCAENA GLAUCA* (L.) Benth.

32817. *NYCTANTHES ARBOR-TRISTIS* L.

Hursingar.

"A dwarf tree with spreading top and highly scented white flowers."

Distribution.—A small tree with flowers in heads, found in India at an elevation of 1,000 to 3,000 feet; generally cultivated in the Tropics.

32818. *OROXYLON INDICUM* (L.) Vent.

See No. 29183 for description.

32819. *OWENIA CERASIFERA* F. Mueller.

Queensland-plum.

"A handsome evergreen tree; the fruit is eaten."

Distribution.—A small tree growing along the Burdekin River in Queensland, Australia.

32820. *PARKINSONIA ACULEATA* L.

32821. *PHOENIX FARINIFERA* Roxburgh.

"The leaves of *Phoenix farinifera* are made into coarse sleeping mats in India, while the split petioles are fashioned into baskets. In China the fiber is used for brushes." (*Dodge, Useful Fiber Plants.*)

"A dwarf species, adapted to sandy and otherwise dry and barren land, but prefers the vicinity of the sea. Berry shining black, with a sweet mealy pulp." (*Mueller, Select Plants.*)

Distribution.—Along the Coromandel Coast of southern India, and in the northern part of Ceylon.

32822. *PHOENIX PALUDOSA* Roxburgh.

"A stout Indian species, not very tall, of value for decorative culture." (*Mueller, Select Plants.*)

"The leaves supply material for rough ropes in the Sundarbans, which are used for securing boats, logs, etc., and its leaves are also employed for thatching." (*Dodge, Useful Fiber Plants.*)

Distribution.—A small tree found at the mouths of rivers along the coast of India from Bengal to Burma and in the Andaman Islands; also in Siam and Cochin China.

32784 to 32826—Continued.**32823. PHOENIX ZEYLANICA Trimen.**

A moist low-growing species occurring in Ceylon, attaining a height of from 6 to 20 feet, and much resembling *Phoenix sylvestris*.

Distribution.—A small tree growing in the southern and western parts of Ceylon.

32824. PHYLLANTHUS EMBLICA L.**Emblie myrobalan.****32826. TOONA CILIATA Roemer.****"Toon tree."**

"A splendid, rapidly growing shade tree much grown in northern India. It produces excellent timber."

32827 and 32828. PISTACIA VERA L.**Pistache.**

From Russian Turkestan. Purchased from Mr. Vladimir F. Gnesin, Tashkend. Received February 16, 1912.

Seeds of the following; quoted notes by Mr. Gnesin:

32827. "From north of Andijan about 60 miles. From Isboskent north 38 miles. Altitude about 4,000 feet."

32828. "From east northeast of Andijan near Tcharvok. Altitude about 3,000 feet."

32829 to 32836.

From Imperial Estate "Murgab," Bairam-Ali, Oasis of Merv, Russian Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry, February 19, 1912. Collected by him in November, 1911.

Trees of the following; quoted notes by Mr. Meyer:

32829. ULMUS DENSA Litvinov.**Elm.**

"(No. 997.) An ornamental elm, forming a dense head of branches, which are often clothed with corky wings. Stands great heat and a fair percentage of alkaline matter in the soil. Bears the name of *Stamboul*, implying, perhaps, that it came from Constantinople."

Distribution.—The province of Bokhara in the southern part of Turkestan.

32830. ULMUS DENSA Litvinov.**Elm.**

"(No. 998.) An ornamental elm, much like the former, but not of as strong growth. Head globular when young, but as it grows older it loses this regularity of outline and often requires a large space to come to full maturity. This variety is locally called *Kitaisky*, implying that it came from China." (Meyer.)

32831. ULMUS sp.**Elm.**

"(No. 999.) A variety or perhaps a species of elm called *Charavidny*. It is of remarkably dense growth, sprouting out a little distance above the ground, into a number of stems, which form an umbrellalike head of foliage, which is so dense that it seems always twilight, even at bright noon, in an avenue of these trees. This elm apparently prefers a climate with long, hot summers and winters not too cold. It withstands a fair amount of alkali in the soil and in the irrigation water and would be of special value as a shade tree in the hot and dry interior valleys of California, in Arizona, Texas, and New Mexico." (Meyer.)

Note: "The Turki name for elm is *Karagatch* or *Karayagatch*, meaning black wood. The Russians in Turkestan, however, have come to give the name *Karagatch* exclusively to the roundheaded, densely growing varieties of elms." (Meyer.)

32829 to 32836—Continued.**32832. PRUNUS ARMENIACA L.****Apricot.**

"(No. 1000.) A native central Asian variety, called *Bjelaia Zvezda*, meaning white star. Originated in the oasis of Samarkand. Fruits large, of pale-yellow color, very aromatic." (*Meyer.*)

32833. PRUNUS ARMENIACA L.**Apricot.**

"(No. 1002.) A native central Asian variety of apricot, called *Bairam-Ali*. Said to be of excellent qualities." (*Meyer.*)

32834. PRUNUS ARMENIACA L.**Apricot.**

"(No. 1001.)" Cuttings of this received under S. P. I. No. 32348. See this number for description.

32835. PRUNUS ARMENIACA L.**Apricot.**

"(No. 1003.)" Cuttings of this received under S. P. I. No. 32349. See this number for description.

32836. PRUNUS ARMENIACA L.**Apricot.**

"(No. 1004.)" Cuttings received under S. P. I. No. 32350. See this number for description.

32837. LANGUAS GALANGA (L.) Stuntz.**Galangale.**

From the island of Cebu. Presented by Mr. O. W. Barrett, Chief, Division of Experiment Stations, Bureau of Agriculture, Manila, P. I. Received February 19, 1912.

"This root is used in place of ginger, or perhaps in preference thereto. The plant is known in the Visayas as *Languas* and as *Lancoas* in Pampanga, Luzon; it is only semicultivated anywhere. It is used both raw and cooked with fish and meats." (*Barrett.*)

32840 and 32841.

From Mexico. Presented by Dr. C. A. Purpus, Zacuapam, Huatusco, Vera Cruz, Mexico. Received February 19, 1912.

Seeds of the following; quoted notes by Dr. Purpus:

32840. PEDILANTHUS APHYLLUS Boiss.

"Wax plant from Tehuacan, Puebla."

32841. PINUS GREGGII Engelm.**Pine.**

"From Esperanza, Puebla."

32842. PERSEA AMERICANA Miller.**Avocado.**

From Guatemala City, Guatemala. Presented by Mr. Geo. A. Bucklin, jr., American consul general. Received February 20, 1912.

"Seeds of the round variety from Amatitlan."

32843 and 32844.

From Manila, Philippine Islands. Presented by Mr. O. W. Barrett, Chief, Division of Experiment Stations, Bureau of Agriculture. Received February 20, 1912.

"Roots of the following plants which are found in comparatively moist situations and in half shade; should prove desirable ornamentals." (*Barrett.*)

32843. (Undetermined.)**Aroid.****32844. (Undetermined.)**

"A zinziberaceous plant that reaches a height of 10 to 15 feet." (*Barrett.*)

32845 to 32859. PHOENIX DACTYLIFERA L.**Date.**

From Gourara, Algeria. Presented by Dr. L. Trabut, Algiers, Algeria, at the request of Mr. Walter T. Swingle, of the Bureau of Plant Industry. Received February 19, 1912.

Fruits of the following; notes by Dr. Trabut:

- 32845. *Timedouel*. From the oasis of Oulad Said.
- 32846. *Timoudjedel*. From the oasis of Oulad Said.
- 32847. *Tinakorr*. From the oasis of El Barka.
- 32848. *Tinhoud*. From the oasis of Heha.
- 32849. *Fillal*. From the oasis of Adjediral.
- 32850. *Adham el Hejd*. From the oasis of El Barka.
- 32851. *Tazerzait*. From the oases of Timimoun and Oulad Said.
- 32852. *Takarbouchett*. From the oasis of Timimoun.
- 32853. *Tinasser*. From the oasis of Heha.
- 32854. *Ahartann*. From the oasis of Timimoun.
- 32855. *Tinaassou*. From the oasis of Oulad Said.
- 32856. *Timdjouhart*. From the oasis of Timimoun.
- 32857. *Timleah*. From the oasis of Timimoun.

Note: Name on sack containing these fruits was *Timleha*.

- 32858. *Tilemson*. From the oasis of Timimoun.
- 32859. *Degla*. From the oasis of Taghouzi.

32860. PRUNUS PSEUDO-CERASUS Lindl.**Japanese flowering cherry.**

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received February 19, 1912.

Seeds of the flowering cherry from the island of Oshima, for use in experiments to find a suitable stock for the double-flowered varieties.

32863. DIOSPYROS LOTUS L.**Wild persimmon.**

From Tangsi, China. Presented by Rev. Alex. Kennedy, through Rev. J. M. Farnham, Shanghai, China. Received February 14, 1912.

Cuttings.

32864 to 32866. DIOSPYROS KAKI L. f.**Persimmon.**

From Hiroshima, Japan. Purchased from Rev. H. Loomis, Yokohama. Received February 23, 1912.

Cuttings of the following; names and notes by Rev. Mr. Loomis:

- 32864. "*Giumbo*. Supposed to be scions of this variety, which is considered the best in Japan for drying."
- 32865. "*Saijo*."
- 32866. "*Gusho*."

32867 to 32872. DIOSPYROS KAKI L. f.**Persimmon.**

From Kawanishimura, Settsu, Japan. Presented by Mr. M. Kishimoto, Japan Nursery Co. (Ltd.). Received February 24, 1912.

Plants of the following; quoted notes by Mr. Kishimoto:

- 32867. "*Gusho*. Shape flat, taste sweet."

32867 to 32872—Continued.**32868.** "*Fuyu*. Large, sweet variety."**32869.** "*Mino*. Very large, astringent variety."**32870.** "*Kubo*. Very early, sweet variety."**32871.** No label.**32872.** No label.

NOTE.—These two unlabeled plants are *Kubo*, listed under S. P. I. No. 32870, and *Hachiya*, a long, astringent variety. They can probably be identified when they fruit.

32873. MAURITIA VINIFERA Mart.**Buriti.**

From Bahia, Brazil. Presented by Mr. Southard P. Warner, American consul. Received February 27, 1912.

"A beautiful palm, which I saw in the greatest abundance in the swamps of Piauhý and Goyaz; it is called *Buriti* by the inhabitants, and is the *Mauritia vinifera* of Martius. This plant is not only the most beautiful, but one of the loftiest in the country; the leaves are fan shaped and form a large round ball at the top of the stem, after the manner of the Carnahuba. It produces a great number of nuts about the size of a small egg, covered with rhomboidal scales arranged in a spiral manner; between these scales and the albuminous substance of the nut there exists an oily pulp of a reddish color, which the inhabitants of Crato boil with sugar and make into a sweetmeat. In Piauhý they prepare from this pulp an emulsion which, when sweetened with sugar, forms a very palatable beverage, but if much used it is said to tinge the skin a yellowish color. The juice of the stem also forms a very agreeable drink, but to obtain it the tree must be cut down, when several holes about 6 inches square, 3 deep, and about 6 feet apart are cut in the trunk with a small axe, which in a short time become filled with a reddish colored liquid having much the flavor of sweet wine." (*G. Gardner, Travels in the Interior of Brazil, p. 171-172.*)

32874. PERSEA AMERICANA Miller.**Avocado.**

From Guatemala City, Guatemala. Presented by Mr. S. Billow. Received February 26, 1912.

"Seeds of an avocado stated to be the largest and most deliciously flavored variety that is grown in Guatemala. They are now (February 22) in season." (*Billow.*)

32875. CITRUS NOBILIS Lour.(?)**Tangerine.**

From Algiers, Algeria. Presented by Dr. L. Trabut. Received February 26, 1912.

"*Clementine.*"

Cuttings.

32877. TRITICUM DURUM Desf.**Wheat.**

From Atbazar, Akmolinsk district, Siberia. Received through Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry. Received February 27, 1912.

"(No. 1745a, November, 1911.) A very large hard wheat, called *Afrikanski*. Obtained through Mr. E. H. Brittenham, assistant manager of the Omsk office of the International Harvester Co. of America. See No. 1631a (S. P. I. No. 32175) for further remarks." (*Meyer.*)

32878 to 32882.

From Granada, Spain. Received from Mr. Pedro Giraud, at the request of Mr. William A. S. Davenhill, British consulate, February 26, 1912.

Cuttings of the following; quoted notes by Dr. Gustav Eisen, Academy of Sciences, San Francisco, Cal.:

32878. FICUS CARICA L.**Fig.**

"*Isabella*. This is cultivated extensively, I might say preferably, in and about Granada. It is a medium-sized fig, rounded turbinate, white in color, with reddish pulp. In shape it resembles the *Ficus hirta* of Japan, with a well set neck. It is an exceedingly good fig and one of the best table varieties I have tasted. It was ripe in September and we still had good fruit in November, a long season for any fig. This fig, as far as I know, has not been introduced in California."

32879. VITIS VINIFERA L.**Grape.**

"*Jeresiana*. This is the predominant grape in Granada. It resembles the *Verdal* as grown in California, but is sweeter, though perhaps smaller in size. Its pulp is firm and stands shipment well, the large, white bunches apparently as perfect after having stood the transportation over country roads as if they had just been picked from the vine. It is a very desirable table variety and one which seems suited to a high altitude. It is also a good bearer, a hardy plant, and altogether a profitable grape. I have not observed it in California."

32880. OLEA EUROPEA L.**Olive.**

"*Cuatro hermanos*, from Canales. These olives are of good size and early maturity, ripening in November. They occur always in fours, sitting close together and forming a cross with four arms on the very stem. It is said to be one of the best olives for both oil and pickling. The olive from this locality is considered one of the hardiest and is suited to districts situated on the limits of possible olive culture, Canales being about 4,000 feet above Granada and 6,000 above sea level, and subject to heavy winds, heavy frosts, and winter snows. Still, olive culture is profitable around Canales and every available space of ground is covered with trees."

32881. PUNICA GRANATUM L.**Pomegranate.**

"*Granados de la Vega*."

32882. CYDONIA OBLONGA Miller.**Quince.**

"From Antequera, said to be the best."

32883 and 32884.

From Spain. Received from Mr. Pedro Giraud, at the request of Mr. William A. S. Davenhill, British consulate, Granada, February 26, 1912.

Seeds of the following; quoted notes by Dr. Gustav Eisen, California Academy of Sciences, San Francisco, Cal.:

32883. CUCUMIS MELO L.**Muskmelon.**

"*San Martin*. This is the principal autumn fruit in Spain. It is related to the Casaba, but is of even better quality. Ripens from October to January. It is picked two weeks before being fully ripe and then kept in the dark. In shape it is oblong, rounded; skin rough with longitudinal green and warty ribs, between which the skin is colored bright green. Flesh transparent, yellowish amber to deep orange, solid, sweet, and highly flavored. A very superior variety, which can not be praised too highly."

32884. ALLIUM CEPA L.**Onion.**

"Large white onion from Dilar."

32885. CYMBOGON sp.**Lemon grass.**

From Douglas Dale, Jeolikote Post Office, United Provinces, India. Presented by the Superintendent, Kumaon Government Gardens, Mr. Norman Gill. Received February 28, 1912.

Procured for the experiments with oil-producing grasses being carried on by the Office of Drug-Plant Investigations.

Plants.

32886. DIOSPYROS sp.**Persimmon.**

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received February 28, 1912.

Cuttings.

32890 and 32891. GLYCINE HISPIDA (Moench) Maxim.**Soy bean.**

From Blacksburg, Va. Grown by the Virginia Agricultural Experiment Station. Received February 27, 1912.

Seeds of the following; quoted notes by Mr. W. J. Morse:

32890. "*Duggar*. Grown under No. 17268C at the Virginia Experiment Station, Blacksburg, Va., 1911. A field mass selection at Arlington Experimental Farm in 1907 out of S. P. I. No. 17268, *Ito San*. An olive-yellow seeded variety of medium maturity found especially promising in Alabama and Virginia."

32891. "*Austin*. The progeny of S. P. I. No. 17263 grown under No. 17263 at Virginia Experiment Station, Blacksburg, Va., 1911; originally from S. P. I. No. 6397 from Pingyang, Korea. This variety was also distributed under Agrostology No. 1539. A late olive-yellow seeded variety found especially promising in Virginia, Tennessee, and southern Pennsylvania."

32892. CAREX PHYSODES Bieb.

From Peshy Kara Kum Desert, Turkestan. Presented by Mr. W. W. Mackie, Esperanza, Sonora, Mexico, through Mr. D. A. Brodie, Acting Agriculturist in Charge, Office of Farm Management, Bureau of Plant Industry. Received February 29, 1912.

"This carex grows abundantly on the loose desert sand of the Peshy Kara Kum Desert of southern Turkestan. It produces excellent feed for horses, camels, sheep, donkeys, etc., with less than 4 inches of rain per annum. It grows only on the loose sand. The soil expert would class this sand as medium. To protect itself from the elements when the roots are exposed by the winds each root and rootlet gathers about itself a layer of sand several times its diameter, holding it against considerable strain and wear." (*Mackie*.)

32894 to 32900. PHOENIX DACTYLIFERA L.**Date.**

From the Siwa Oasis. Procured by Mr. George J. Salem, Cairo, Egypt. Received February 26, 1912.

Fruits of the following varieties; native names given by Mr. Salem; translations in parenthesis by Mr. Alexander Aaronsohn, Bureau of Plant Industry:

32894. *Frihy* (spirited).

32895. *Gazaly* (antelope). "This variety is not very productive, though its dates are marvelous in flavor, appearance, and power to keep long." (*Salem*.)

32894 to 32900—Continued.**32896.** *Gorm-Gazaly* (antelope's abode).**32897.** *Kaiby*.**32898.** *Saidy* (from Said, rural).**32899.** *Wedi* (valley or creek).**32900.** *Wishk-Gobeil* (mountain slope).**32901. DIOSPYROS KAKI L. f.****Persimmon.**

From Algiers, Algeria. Presented by Dr. L. Trabut. Received March 2, 1912.

"*Boufarik*. A new variety. Fruit green, large, round, flattened, very good."
(Trabut.)

32902. NEPHELIUM LAPPACEUM L.**Rambutan.**

From Buitenzorg, Java. Presented by Mr. W. G. Gobius, Secretary to the
Department of Agriculture. Received March 1, 1912.

See No. 25165 for general description of this fruit.

32906 to 32909. GLYCINE HISPIDA (Moench) Maxim. Soy bean.

The following list represents some promising varieties of soy beans grown in
quantity at the Arlington Experimental Farm, Virginia, in 1911. Numbered
March 4, 1912, for convenience in recording distribution.

Seeds of the following; quoted notes by Mr. W. J. Morse:

32906. "*Virginia*. Grown under No. 19186D. A pure field selection at
Arlington farm in 1907 out of S. P. I. No. 19186, from Newchwang, Manchuria,
1906. A medium-late brown-seeded variety of considerable promise."

32907. "*Peking*. Grown under No. 17852B. A pure field selection at
Arlington Experimental Farm in 1907 out of S. P. I. No. 17852, *Meyer*, from
Peking, China. A medium-late variety with small black seeds. Very
prolific and especially promising as a hay variety."

32908. "*Chestnut*. Grown under No. 20405B. A field mass selection at
Arlington Experimental Farm in 1907 out of S. P. I. No. 20405, *Habaro*,
from Khabarovsk, Siberia, 1906. A medium-early brown-seeded variety of
promise in the more northern States."

32909. "*Auburn*. Grown under No. 21079A. A field mass selection at
Arlington Experimental Farm in 1907 out of S. P. I. No. 21079, *Shingto*,
from Tieling, Manchuria, 1907. A black-seeded variety in Pennsylvania
and New York."

32910. PHYTELEPHAS AEQUITORIALIS Spruce. Ivory-nut palm.

From Guayaquil, Ecuador. Presented by Mr. Herman R. Dietrich, American
consul general. Received March 1, 1912.

Distribution.—An erect palm, sometimes 20 feet high, found on the plains in the
vicinity of Guayaquil and extending up the valleys in the Andes to an elevation of
5,000 feet, especially toward Mount Chimborazo, in Ecuador.

32911 to 32913.

From Lawang, Java. Presented by Mr. M. Buysman. Received February
26, 1912.

32911 to 32913—Continued.

Seeds of the following:

32911. AESCULUS TURBINATA Blume.

Distribution.—A tree found on wooded mountain slopes in the provinces of Kiangsu and Chekiang in China and in the islands of Japan.

32912. PTEROCARYA SORBIFOLIA Sieb. and Zucc.

Distribution.—Wooded mountain slopes of Japan.

32913. RANDIA FORMOSA (Jacq.) Schum.

Distribution.—The countries in the northern part of South America, including Guiana, Colombia, Venezuela, and Peru, and the islands of the Caribbean Sea.

32914 to 32916.

Presented by Mr. Walter Fischer, Campo de Cultura Experimental Paraense, Para, Brazil. Received February 27, 1912.

Seeds of the following; quoted notes by Mr. Fischer:

32914. SAPINDUS sp.

"A species of Sapindus, which I found along a roadside about 6 miles from Santarem. The tree grows to a height of 30 to 40 feet and is found along the borders of clearings. The natives were familiar with the saponifying property of the seeds, but as far as I could learn made no use of them. Santarem is located at the north of the Tapajos on the Amazon, about 500 miles from Para."

32915 and 32916. PITHECOLOBIUM UNGUIS-CATI (L.) Benth.

"Two varieties of seeds that I found and collected in Barbados. The local name is 'bread and cheese.' The seeds are from a very attractive ornamental small tree much used as a border shrub and as a hedge plant for which latter purpose it is well adapted. It has a clean foliage of compound leaves, each leaf consisting of a twin pair of obovate leaflets. What makes the plant most conspicuous and attractive is its heavy burden of dense panicles of pods, open and twisted when ripe and showing the shiny-black small seeds to each of which is attached a red or a white arillus. This hedge plant would be excellently adapted to southern Florida where it may already exist."

32915. "Seed with white aril."

32916. "Seed with red aril."

Distribution.—Sandy soil in southern Florida and in the West Indies and the tropical part of South America.

32917 to 32973.

From La Mortola, Ventimiglia, Italy. Presented by Prof. Alwin Berger, curator of the garden. Received March 2, 1912.

Seeds of the following:

32917. AMPELOPSIS HUMULIFOLIA Bunge.

Distribution.—A vine found in the province of Chihli, Shingking, Kansu, and Hupeh in China, and in Chosen (Korea), Formosa, and in Japan.

32918. ARGANIA SPINOSA (L.) Skeels.

Argan.

See Nos. 3490 and 28783 for previous introductions.

32919. ARISTOTELIA MACQUI L'Heritier.

Maqui.

See No. 26306 for description.

32920. BERBERIS GLOBOSA Benth.

Barberry.

See No. 31245 for previous introduction.

32917 to 32973—Continued.

32921. *BERBERIS GUIMPELII* Koch and Bouche. **Barberry.**
32922. *BERBERIS JAPONICA BEALEI* (Fortune) Skeels. **Barberry.**
See Nos. 31244 and 32700 for previous introductions.
32923. *BERBERIS NAPAULENSIS* (DC.) Spreng. **Barberry.**
See No. 28839 for description.
32924. *CAJUPUTI CUTICULARIS* (Labill.) Skeels.
(*Melaleuca cuticularis* Labill. 1806, *Novae Hollandiae Plantarum Specimen*, vol. 2, p. 30, pl. 171.)
32925. *CAJUPUTI ERICIFOLIA* (Smith) Lyons. **Bottle-brush tea-tree.**
See No. 30793 for previous introduction.
32926. *CAJUPUTI HYPERICIFOLIA* (Salisb.) Skeels. **Hillock tree.**
See No. 30761 for previous introduction.
32927. *CAJUPUTI PUBESCENS* (Schauer) Skeels.
See No. 30795 for previous introduction.
32928. *CAJUPUTI PULCHELLA* (R. Br.) Skeels.
(*Melaleuca pulchella* R. Br. 1812, *Aiton Hortus Kewensis*, ed. 2, vol. 4, p. 414.)
32929. *CAJUPUTI WILSONI* (Mueller) Skeels. **Wilson's tea-tree.**
(*Melaleuca wilsoni* Mueller 1861, *Fragmenta Phytographiae Australiae*, vol. 2, p. 124, pl. 15.)

The reason for the use of the generic name *Cajuputi* in place of *Melaleuca* is explained in Inventory No. 27 (Bulletin 242, Bureau of Plant Industry, U. S. Dept. of Agriculture, 1912, p. 39.) *Cajuputi cuticularis* is a tall shrub or small tree and *C. pulchella* is a low, spreading shrub, both growing along streams in West Australia. *C. wilsoni* is a tall shrub found in Victoria and South Australia.

32930. *CELTIS AUDIBERTIANA* Spach. **Hackberry.**

This species is generally referred to *C. occidentalis* L. As the latter is now considered to cover several distinct forms it is thought best to retain the present name until the material can be grown.

32931. *COLUTEA CILICICA* Boiss. and Bal.

Distribution.—A shrub found on the coast and on the slopes of the mountains in the southern part of Asia Minor from Smyrna to Cilicia.

32932. *COTONEASTER AFFINIS* Lindl.

See No. 28207 for previous introduction.

32933. *COTONEASTER BUXIFOLIA* Wall.

Distribution.—On the slopes of the Nilgiri Hills in the southern part of India.

32934. *COTONEASTER MICROPHYLLA* Wall.

Distribution.—A shrub found on the temperate slopes of the Himalayas at an altitude of 4,000 to 8,000 feet, between Kashmir and Bhutan in northern India.

32935. *COTONEASTER MICROPHYLLA THYMIFOLIA* (Loud.) Koehne.

Distribution.—A low shrub found on the alpine slopes of the Himalayas from Kashmir to Sikkim in northern India.

32936. *COTONEASTER PANNOSA* Franchet.

Distribution.—A low shrub found on limestone ledges of the mountains in the province of Yunnan in China at an elevation of 10,000 feet.

32917 to 32973—Continued.

32937. COTONEASTER ROTUNDIFOLIA Wall.

See No. 28211 for previous introduction.

32938. COTONEASTER SIMONSI Baker.

A half-hardy shrub. See No. 28212 for distribution of this species.

32939. COTYLEDON BARBEYI Schweinf.

Distribution.—An exquisite plant for carpet bedding found on the slopes of the mountains in the province of Yemen in western Arabia.

32940. ELAEAGNUS LATIFOLIA L.

Distribution.—From the subtropical and temperate slopes of the Himalayas southward to Ceylon in India, and throughout the Malay Archipelago.

32941. × ELAEAGNUS PUNGENS REFLEXA (M. and D.) Rehd.

A spreading shrub, considered to be a hybrid between *Elaeagnus pungens* and *E. glabra*.

32942. FRAXINUS ORNUS L.

Ash.

Distribution.—A small tree found in southern Europe and western Asia, extending from Spain through southern France and Germany, Italy, and Greece to Asia Minor and Syria.

32943. GERANIUM PALMATUM Cav.

Distribution.—A herbaceous perennial found in the Canary Islands.

32944. GREVILLEA THELEMANNIANA Huegel.

Distribution.—A spreading shrub with racemes of pink flowers, found in the valley of the Swan River in West Australia.

32945. ILEX CORNUTA Lindl. and Paxton.

Chinese holly.

See No. 22979 for description of this species.

32946. PODACHAENIUM EMINENS (Lag.) Baill.

See No. 28850 for description of this species.

32947. RHUS EXCISA PALLENS (Eckl. and Zeyh.) Sond.

Distribution.—A shrub found in the Uitenhage and Albany districts of South Africa.

32948. ROSA AGRESTIS Savi.

Rose.

Distribution.—Western and southern Europe, extending from Sweden and Denmark southward through France to Italy, and in Morocco, Tunis, and Algiers.

32949. ROSA CYMOSA Trattinick.

Rose.

Distribution.—The provinces of Kiangsu, Chekiang, Kiangsi, Fokien, Hupeh, Kwangtung, and Hongkong in China.

32950. ROSA DAMASCENA Miller.

Rose.

32951. ROSA DAMASCENA TRIGINTIPETALA (Dieck) Koehne.

Distribution.—This is the form of *Rosa damascena* which is cultivated in Roumelia for the production of rose oil.

32952. ROSA FENDLERI Crepin.

Rose.

32953 to 32955. ROSA INDICA L.

Rose.

32953. Variety *borbonica*.

32954. Variety *major*.

32955. Variety *semperflorens fl. simpl.*

32917 to 32973—Continued.

32956. *ROSA LESCHENAULTIANA* (Red. and Thorry) Wight and Arn. **Rose.**

Distribution.—The slopes of the Nilgiri and Pulney hills in the western peninsula of India.

32957. *ROSA LYELLII* Lindl. **Rose.**

Distribution.—The province of Nepal in northern India; considered by some authorities to be a climbing form of *Rosa involucrata* Roxb.

32958. *ROSA OXYODON* Boiss. **Rose.**

Distribution.—The slopes of the eastern part of the Caucasus Mountains at an elevation of 6,000 feet.

32959. *ROSA PHOENICIA* Boiss. **Rose.**

Distribution.—Along the shores of the Mediterranean in Asia Minor and Syria.

32960. *ROSA SEMPERVIRENS* L. **Rose.**

Distribution.—Southern Europe, extending from Portugal and Spain eastward through southern France, Italy, and Greece to Asia Minor, and in northern Africa.

32961. *ROSA SERAFINII* Viv. **Rose.**

Distribution.—The islands of Corsica, Sardinia, and Sicily, and in Italy.

32962. *ROSA SOULLEANA* Crep. **Rose.**

See No. 21747 for description.

32963. *ROSA SPINOSISSIMA* L. **Rose.**

Distribution.—Central Europe and Asia, extending from the British Isles and northern Spain eastward through Europe and Asia to Manchuria and northwestern China.

32964. *ROSA TOMENTELLA ALLIONII* (Burnat) Keller. **Rose.**

Distribution.—The slopes of the Maritime Alps between France and Italy.

32965. *ROSA VIRGINIANA* Miller. **Rose.**

See No. 28244 for previous introduction.

32966. *ROSA XANTHINA* Lindl. **Rose.**

See Nos. 28978 and 21620 for description.

32967. *ROSA* sp. **Rose.**

32968. *TECOMA PANDORANA* (Andrews) Skeels.

(*Bignonia pandorana* Andrews 1800, *Botanists' Repository*, vol. 2, pl. 86.)

The seeds of this Australian trumpet flower were received under the name *Tecoma australis*, which was published in 1810 by R. Brown (*Prodromus*, p. 471). Brown cited "*Bignonia pandorea* Andr." Andrews spelled the specific name "*pandorana*," and this name, being earlier, is here restored.

Distribution.—Found in North Australia, Queensland, New South Wales, and Victoria, in Australia.

32969. *PODRANEA RICASOLIANA* (Tanf.) Sprague.

Distribution.—A climbing shrub found in thickets at the mouths of streams in the eastern part of Cape Colony.

32970. *× TRITOMA CORALLINA* Hort.

A hybrid between *Tritoma macowani* (Baker) Skeels (*Kniphofia macowani* Baker, 1874, *The Journal of Botany*, vol. 12, p. 3), and *T. uvaria* (L.) Ker.

32917 to 32973—Continued.

32971. *TRITOMA NATALENSIS* (Baker) Skeels.(*Kniphofia natalensis* Baker, 1885, The Journal of Botany, vol. 23, p. 278.)32972. *TRITOMA NELSONI* (Masters) Skeels.(*Kniphofia nelsoni* Masters, 1892, Gardeners' Chronicle, ser. 3, vol. 11, p. 554, fig. 83.)

The necessity for using the generic name *Tritoma* for the plants usually referred to the genus *Kniphofia* is explained in Inventory No. 24 (Bulletin 223, U. S. Department of Agriculture, Bureau of Plant Industry, 1911, p. 25).

These species are all natives of South Africa, *Tritoma macowani* being found in the central and coast regions, *T. natalensis* in Natal and *T. nelsoni* in the Orange Free State.

32973. *TRITOMA TUCKERII* (Baker) Skeels.

See No. 28526 for distribution of this species.

32975 to 33006.

From Tiflis, Caucasus, Russia. Presented by Mr. D. A. Rolloff, Director, Botanic Garden. Received March 2, 1912.

Seeds of each of the following:

32975. *ACER TRAUTVETERI* Medw.

Maple.

See No. 30531 for distribution of this species.

32976. *ASTRAGALUS BUNGEANUS* Boiss.

Distribution.—Stony mountain slopes in the Caucasus region of southeastern Russia.

32977. *ASTRAGALUS* sp.

This was received under the name *Astragalus cyri* Fomin, but as yet the place of publication of this name has not been found.

32978. *ASTRAGALUS KADSHORENSIS* Bunge.

Distribution.—Slopes of the mountains in the Tiflis region of southeastern Russia.

32979. *ASTRAGALUS MICROCEPHALUS* Willd.

Distribution.—On the slopes of the mountains in the northeastern part of Asia Minor and the southeastern part of Russia.

32980. *ASTRAGALUS URANIOLIMNEUS* Boiss.

Distribution.—On the mountains in Armenia.

32981. *CELTIS CAUCASICA* Willd.

See No. 30575 for previous introduction.

32982. *CORNUS AUSTRALIS* Meyer.

See No. 30570 for distribution of this species.

32983. *DAPHNE OLEOIDES* Schreber.

Distribution.—A shrub found on the subalpine mountain slopes in southern Europe, extending from Spain through Italy, Greece, and Turkey to Asia Minor and Syria, and in Algeria.

32984. *ELAEOGNUS ANGUSTIFOLIA* L.

Oleaster.

See No. 31822 for description.

32975 to 33006—Continued.

32985. *HEDERA COLCHICA* Koch.*Distribution*.—The Trans-Caucasian region of southeastern Russia, and in northern Persia.32986. *IRIS CAUCASICA* Hoffm.**Iris.***Distribution*.—A pale or bright yellow-flowered iris, found in the Caucasus region of southeastern Russia and eastward through Asia Minor and Persia to Turkestan; ascending to an elevation of 6,000 feet.32987. *IRIS RETICULATA* Bieb.**Iris.**

Flowers bright purple, very fragrant.

Distribution.—Same as No. 32986.32988. *JUNIPERUS EXCELSA* Willd.**Juniper.**

See No. 26688 for description.

32989. *JUNIPERUS FOETIDISSIMA* Willd.**Juniper.**

See No. 29246 for description.

32990. *JUNIPERUS OXYCEDRUS* L.**Juniper.**

See No. 26884 for description.

32991. *LALLEMANTIA IBERICA* (Bieb.) Fisch. and Meyer.

See No. 29932 for description.

32992. *LATHYRUS ROSEUS* Steven.

A hardy herbaceous climber with beautiful rose-colored flowers.

Distribution.—Wooded mountain slopes in the Trans-Caucasian region of Russia and in Asia Minor.32993. *LATHYRUS ROTUNDFOLIUS* Willd.**Persian everlasting pea.**“A low-growing winged species with large, rose-pink flowers is of easy culture requiring a cool, shady, and sheltered position. Adapted to stony banks.” (*Bailey's Cyclopedia of American Horticulture*, p. 888.)*Distribution*.—Southeastern Russia, Asia Minor, and the northern part of Persia.32994. *LAUROCERASUS OFFICINALIS* Roem.**Laurel cherry.**

See Nos. 27360 and 27684 for description.

32995. *LONICERA BRACTEOLARIS* Boiss. and Buhse.**Honeysuckle.***Distribution*.—A shrub found in the vicinity of Tassakend in the province of Karabagh in the Caucasus region of Russia.32996. *PAEONIA MLOKOSIEWITSCHI* Lomakin.**Peony.**

See No. 27674 for description.

32997. *PAEONIA WITTMANNIANA* Hartwiss.**Peony.***Distribution*.—Subalpine slopes of the mountains in the northern part of Persia.32998. *PALIURUS SPINA-CHRISTI* Miller.**Christ's-thorn.**

See No. 26879 for description.

32999. *PISTACIA MUTICA* Fisch. and Meyer.

See No. 9474 for description.

Distribution.—On the lower slopes of the mountains in Asia Minor, Persia, and western Afghanistan.

32975 to 33006—Continued.

33000. *POPULUS TREMULA* L. Poplar.

See No. 29098 for description.

33001. *PYRUS NIVALIS ELAEAGRIFOLIA* (Pall.) Schneider. Wild pear.

See No. 27670 for description.

33002. *RHAMNUS PALLASII* Fischer.

See No. 27669 for description.

33003. *SOLANUM NIGRUM* L. Nightshade.33004. *SOLANUM NIGRUM* L. Nightshade.Variety *chlorocarpa*on.33005. *TRIFOLIUM ANGUSTIFOLIUM* L. Clover.

See Nos. 7753 and 9750 for previous introductions.

Distribution.—The countries bordering on the Mediterranean from Spain to Syria, and in northern Africa.33006. *VICIA PERSICA* Boiss.*Distribution*.—Alpine regions of Armenia and northwestern Persia.33007. *HIBISCUS MUTABILIS* L.

From Kiaying chow, China. Presented by Mr. George Campbell. Received March 5, 1912.

"This is a showy plant with blossoms something like a hollyhock; with me it grew to be about 3 feet high by blossoming time, and had a profusion of great double flowers with five centers; hence called *ng-im-to*, or five-heart-blossom, *Fu-yung*. More than half of them blasted and dropped off, but those left fairly weighed down the little tree. It blossomed November 2. This double kind is rather rare, but is propagated by cuttings." (Campbell.)

Distribution.—Common in China, except in the colder parts, both wild and cultivated; also cultivated in most warm countries.

33008 to 33068.

From Kew, England. Presented by Dr. David Prain, Director, Royal Botanic Garden. Received February 3, 1912.

Seeds of the following:

33008 to 33013. Herbaceous plants.

33008. *CHRYSANTHEMUM CINERARIAEFOLIUM* (Trev.) Vis. Pyrethrum.33009. *HYPERICUM FRAGILE* Heldr. and Sart.

Distribution.—A very low-growing *Hypericum* found in the fissures of the rocky slopes of the Delphi Mountains in the vicinity of Steni, in eastern Greece.

33010. *MECONOPSIS ACULEATA* Royle.

Distribution.—A herbaceous perennial with blue-purple flowers found on the Himalayas from Kashmir to Kumaon, in northwestern India.

33011. *MECONOPSIS CAMBRICA* Viguiet. Welsh-poppy.

Distribution.—A herbaceous perennial with pale-yellow flowers found in rocky places in the woods in western Europe from the British Isles southward to Spain.

33008 to 33068—Continued.

33008 to 33013—Continued.

33012. *MECONOPSIS HETEROPHYLLA* Benth.

Distribution.—From the San Francisco Bay region southward to southern California.

33013. *MECONOPSIS RACEMOSA* Maxim.

Distribution.—A herbaceous perennial found in the province of Kansu, in the northwestern part of China.

33014 to 33068. Trees and shrubs.

33014. *ACER NIKOENSE* (Miq.) Maxim.

Maple.

A very distinct species; leaves turn brilliant scarlet in autumn.

Distribution.—The wooded subalpine slopes of the mountains in the islands of Tozando and Kiushu, in Japan.

33015. *BERBERIS ACUMINATA* Franch.

Barberry.

See Nos. 22545 and 29957 for previous introductions.

33016. *BERBERIS ANGULOSA* Wall.

Barberry.

See No. 27115 for previous introduction.

33017. *BERBERIS ARISTATA* DC.

Barberry.

See Nos. 27116 and 32789 for previous introductions.

33018. *BERBERIS CONCINNA* Hook. f.

Barberry.

See No. 27117 for previous introduction.

33019. *BERBERIS DICTYOPHYLLA* Franch.

Barberry.

See Nos. 27118, 27400, and 27401 for previous introductions.

33020. *BERBERIS HOOKERI* Lemaire.

Barberry.

Distribution.—Supposed to be a native of the slopes of the eastern Himalayas, in northern India.

33021. *BERBERIS ORTHOBOTRYS* Bienert.

Barberry.

Distribution.—In the province of Kashmir and in northern India, in Afghanistan, and in northeastern Persia.

33022. *BERBERIS PARVIFOLIA* Sprague.

Barberry.

See No. 29958 for previous introduction.

33023. *BERBERIS UMBELLATA* Wall.

Barberry.

See No. 27121 for previous introduction.

33024. *BERBERIS* sp.

Barberry.

This was received under the name *Berberis vilmoriniana*, but as yet the place of publication of this name has not been found.

33025. *BERBERIS YUNNANENSIS* Franch.

Barberry.

Distribution.—On the slopes of the mountains at an altitude of 10,000 feet in the Province of Yunnan, in southwestern China.

33026. *CLEMATIS MONTANA* Hamilton.

Clematis.

Variety *rubens*.

33027. *COLUTEA ARBORESCENS* L.

See Nos. 1570 and 30786 for previous introductions.

33028. *COLUTEA* sp.

This was received under the name *Colutea bullata*, but as yet the place of publication of this name has not been found.

33008 to 33068—Continued.

33014 to 33068—Continued.

33029. COLUTEA ISTRIA Miller.

Distribution.—A tall shrub found in the mountains of Syria and southward through Arabia to Abyssinia.

33030. $\times$ COLUTEA MEDIA Willd.

Considered to be a hybrid between *Colutea arborescens* L. and *C. orientalis* Miller.

33031. COTONEASTER AFFINIS Lindl.

See Nos. 28207 and 32932 for previous introductions.

33032. COTONEASTER AFFINIS BACILLARIS (Wall.) Schneider.

See No. 28208 for previous introduction.

33033. COTONEASTER APPLANATA Arranger.

See No. 29963 for previous introduction.

33034. COTONEASTER BULLATA Bois.

See No. 29964 for previous introduction.

33035. COTONEASTER BUXIFOLIA Wall.

See S. P. I. No. 32933 for distribution.

Distribution.—On the slopes of the Nilgiri Hills in the southern part of India.

33036. COTONEASTER FRANCHETI Bois.

Distribution.—On the mountain slopes in Tibet and in the province of Yunnan in southwestern China.

33037. COTONEASTER FRIGIDA Wall.

Distribution.—A tall shrub or small tree found on the slopes of the Himalayas at an altitude of 7,000 to 10,000 feet in the provinces of Nepal and Sikkim in northern India.

33038. COTONEASTER HORIZONTALIS Decaisne.

See Nos. 1595 and 28209 for previous introductions.

33039. COTONEASTER INTEGERRIMA Medic.

See Nos. 22695 and 29966 for previous introductions.

33040. COTONEASTER LINDLEYI Steud.

Distribution.—On the slopes of the Himalayas in Kashmir, India, and in Afghanistan.

33041. COTONEASTER MICROPHYLLA GLACIALIS Hook.

33042. COTONEASTER MICROPHYLLA THYMIFOLIA (Loud.) Koehne.

See No. 32935 for previous introduction.

Distribution.—A low shrub found on the alpine slopes of the Himalayas from Kashmir to Sikkim in northern India.

33043. COTONEASTER PANNOSA Franchet.

See No. 32936 for previous introduction.

33044. COTONEASTER RACEMIFLORA NUMMULARIA (Fisch. and Mey.) Dipp.

33045. COTONEASTER ROTUNDIFOLIA Wall.

See Nos. 28211 and 32937 for previous introductions.

33008 to 33068—Continued.

33014 to 33068—Continued.

33046. *COTONEASTER SIMONSI* Baker.

See Nos. 28212 and 32938 for previous introductions.

33047. *COTONEASTER* sp.

(Forrest, 5545, China.)

33048. *ELAEAGNUS MULTIFLORA* Thunb.

Oleaster.

See No. 2670 for description.

Distribution.—Throughout Japan, where several varieties are cultivated for their fruit, and in the provinces of Kiangsi and Hupeh in China.33049. *ENKIANTHUS CAMPANULATUS* (Miq.) Nichols.*Distribution*.—On the subalpine slopes of the mountains in the islands of Hondu and Hokushu in Japan.33050. *EXOCHORDA ALBERTI* Regel.

A shrub found in Bokhara in central Asia.

See No. 1767 for previous introduction.

33051. *LIGUSTRUM* sp.

Privet.

(Forrest, 5984, China.)

33052. *LONICERA HENRYI* Hemsl.

Honeysuckle.

Distribution.—A climbing shrub found in the Patung district of the province of Hupeh in China.33053. *LONICERA MAACKII* (Rupr.) Herd.

Honeysuckle.

See No. 22548 for previous introduction.

Distribution.—The provinces of Shingking, Kiangsi, Kiangsu, and Hupeh in China, and in Manchuria and northern Japan.33054. *LONICERA PERICLYMENUM* L.

Honeysuckle.

Variety *belgica*.33055. *LONICERA XYLOSTEUM* L.

Honeysuckle.

Distribution.—Throughout Europe and northern Asia, extending southward to the Caucasus and the valley of the Amur.33056. *MALUS MEDWIETZKYANA* Dieck.

See Nos. 27123 and 30250 for previous introductions.

33057. *MALUS SIKKIMENSIS* (Hook. f.) Koehne.

See No. 27127 for previous introduction.

33058. *RHAMNUS* sp.33059. *RHAMNUS FRANGULA* L.

Alder buckthorn.

See Nos. 2179, 30248, and 30573 for previous introductions.

33060. *RHODODENDRON CAUCASICUM* Pallas.*Distribution*.—Alpine summits of the Caucasus Mountains in south-eastern Russia.33061. *SOPHORA DAVIDI* (Franchet) Skeels.(*Sophora vicifolia* Hance 1881, Journal of Botany, vol. 19, p. 209; not *S. viciaefolia* Salisbury 1796, Prodromus, p. 328.)(*Sophora moorcroftiana davidi* Franchet 1883, Nouvelles Archives du Museum D'Histoire Naturelle, Paris, ser. 2, vol. 5, p. 253, pl. 14.

33008 to 33068—Continued.

33014 to 33068—Continued.

The seeds of this spreading leguminous Chinese shrub were received under the name *Sophora viciifolia*, which was published by Hance in 1881. However, in 1796 Salisbury had published the name *Sophora viciaefolia* for the plant now generally known as *Virgilia capensis*. As it is not allowable to use the same specific name more than once in the same genus, *Sophora viciifolia* Hance is rejected as a homonym. The next name applied to this species was *Sophora moorcroftiana davidi* Franchet; and as it is considered to be distinct from the Indian plant, *S. moorcroftiana*, it is here raised to specific rank.

Sophora davidi was found by Hance in the vicinity of Ichang, in the province of Hupeh, and is also known to grow in the province of Shensi, in China.

33062. *VIBURNUM COTINIFOLIUM* D. Don.

Distribution.—A spreading shrub, often 10 feet high, growing at an altitude of 6,000 to 11,000 feet on the slopes of the Himalayas between Kashmir and Kumaon in the northern part of India.

33063. *VIBURNUM PHLEBOTRICHUM* Sieb. and Zucc.

Distribution.—Wooded mountain slopes in the islands of Hondu and Kiushu in Japan.

33064. *VIBURNUM PUBESCENS* Pursh.33065. *VIBURNUM RHYTIDOPHYLLUM* Hemsl.

Distribution.—A shrub with large, coarsely wrinkled leaves found in the Patung district of the province of Hupeh, China.

33066. *VIBURNUM SARGENTI* Koehne.

See No. 30847 for previous introduction.

33067. *VIBURNUM WRIGHTII* Miq.

Distribution.—On the hillsides and mountain slopes of the Hakodate peninsula in the island of Hokushu in Japan.

33068. $\times$ *PHYSALIS BUNYARDI* Hort.

"This is a cross between *Physalis francheti* and *P. alkekengi*. The colored calyces are much less in size than those of *P. francheti*, and in general appearance the hybrid is about intermediate between the parents. When the growths are cut and the calyces fully colored, the leaves are still in a fresh condition, and for this reason as well as for the less stiff character of the shoots as compared with *P. francheti*, the hybrid may be more valued for use in decorative purposes." (*Gardeners' Chronicle*, vol. 38, 1905, p. 315, fig. 123.)

33069 and 33070. *DIOSPYROS KAKI* L. f.

Persimmon.

From Wakamatsu, Japan. Presented by Rev. H. Loomis, American Bible Society, Yokohama. Received March 7, 1912.

Cuttings of the following:

33069. *Hassaku*.

33070. *Mishiradzu*. "I have grown this variety in my garden for several years and regard it as one of the very best. It is a prolific bearer (the name signifies that the tree takes no thought of itself), it is rich in flavor, very sweet, and not astringent. In size and appearance it resembles *Gema*." (*Loomis*.)

33071. FICUS MACROPHYLLA Desf.**Moreton Bay fig.**

From Sydney, New South Wales, Australia. Presented by Prof. J. H. Maiden, Director and Government Botanist, Royal Botanic Garden. Received March 7, 1912.

"This only grows in the well-watered coastal district, and experiments with the view to introduce it into drier localities have almost invariably resulted in failure." (*Maiden.*)

See No. 3494 for previous introduction.

Distribution.—A large tree found near streams in Queensland and New South Wales in Australia.

33073. HEDYSARUM CORONARIUM L.**Sulla.**

From Jerez de la Frontera, Spain. Presented by Mr. Percival Gassett, American consul. Received March 7 and 19, 1912.

"The sulla plant, or Spanish wild clover, is found in Spain only in southern Andalusia, province of Cadiz, where it grows wild and with most luxuriance in abandoned vineyards. The Spaniards are well aware of the great value of this plant as a rich forage for stock, especially for horses, to whom it is said to give endurance; and not enough sulla can be produced in Jerez to supply the demand, for, after the stock raisers and farmers who grow it have supplied themselves, any surplus is eagerly purchased by the military officers in charge of the Jerez Deposito Semental or depot for breeding horses for the Spanish army. So far, all efforts to make it grow in other parts of Spain, even at Seville, 90 miles from Jerez, have been unsuccessful.

"Practically, then, sulla needs the same climate and soil that produce the famous Jerez, or sherry, grape, unique of its kind in the world. The climate should be sunny, hot, and dry in the summer, with plenty of rain in the fall, and a low temperature that does not reach freezing, although occasional frosts during the winter nights are not unknown in Jerez. When there has been plenty of rain in the fall there has usually been an abundant crop of sulla the next spring.

"Now as to soil. Jerez has three soils, each of which produces a distinct type of wine; the best is known as 'albariza' (lime), the second best as 'barro' (clay), and the least desirable as 'arena' (sand). As a general rule the soil of Jerez vineyards is of a porous character, light, and of a grayish color, the composition of which, according to an analysis made in 1898 in the laboratory of the London Lancet is as follows:

	Per cent.
Calcium carbonate	29. 12
Oxide of iron	4. 08
Sand, etc	45. 80
Soluble salts	. 50
Moisture	16. 70
Loss on ignition	3. 80
	100. 00

"Practically a third part of this soil consists of carbonate of lime and if the fact of producing the nearest imitation of Jerez wine is any indication, it would seem as if sulla might grow in parts of California.

"Although the general belief, which seems to be supported by all other unsuccessful experiments, is that this soil is indispensable for the successful growth of sulla, yet the writer has within a month or so seen an entire field of sulla, a foot or more in height, growing in ordinary black soil, without irrigation, at the Jerez Agricultural Experiment Station, La Granja.

"In planting, the unhusked seed was immersed for 5 minutes in boiling water, or the husked seed in water at 140° F. The seed was sown not later than the next day after this treatment. A good plan is to sow the sulla with wheat or barley and after the latter has been harvested it will come up the following autumn. It is said that if the sulla fails to grow one year and is not disturbed it will come up the year after; under favorable conditions it should grow as high as 3 or 4 feet." (*Extract from report of Mr. Gassett.*)

Distribution.—The countries bordering on the Mediterranean from Spain to Asia Minor and in northern Africa.

33074 to 33076. VITIS VINIFERA L.

Grape.

From Bhamdun, located on the western slope of Mount Lebanon, Syria. Presented by Mr. Alfred Ely Day, Syrian Protestant College, Beirut, Syria. Received February 26, 1912.

Cuttings of the following; quoted notes by Mr. Day:

33074. "*Kāsāfi-dakar*. White berry, size and shape of an olive. Loose cluster. Ripens late and may be kept for winter eating."

33075. "*Aswad-kari*. Berries oval, of moderate size, black streaked with red, tough skin, firm pulp, ripening late, but not so late as *Shatawi* (S. P. I. No. 33113.)"

33076. "*Khudud-ul-banat* (maiden's cheeks). Much like *Miksāsi* (S. P. I. No. 33115), but red in color."

33077 to 33079.

From Siberia. Collected by Mr. Frank N. Meyer, agricultural explorer, Bureau of Plant Industry. Received January 6, 1912. Numbered March 10, 1912.

Seeds of the following; quoted notes by Mr. Meyer:

33077. LARIX SIBIRICA Ledeb.

Siberian larch.

From Marka Kul, Altai Mountains, southern Siberia. Altitude 6,000 feet.

"(June 8, 1911.) Large cones."

See No. 2175 for previous introductions.

33078. PICEA OBOVATA Ledeb.

Spruce.

From Marka Kul, Altai Mountains, southern Siberia. Altitude 5,000 to 7,000 feet.

"(June 7, 8, 9, 1911.) Cones from different localities around Lake Marka Kul."

See No. 20319 for previous introduction.

33079. PINUS CEMBRA L.

Pine.

From Omsk, Siberia.

"(August 5, 1911.) Cones brought in from the Ural Mountains."

See Nos. 20317, 20764, and 20777 for previous introductions.

33080. GOSSYPIMUM BARBADENSE L.

Cotton.

From Cairo, Egypt. Presented by Mr. George J. Salem. Received March 8, 1912.

"*Sekallaridis*. This variety has become somewhat popular in the provinces of lower Egypt, and has been grown during the last two years extensively in those provinces. It resembles much the *Jannowitch*, though its fiber is finer and its color more yellowish." (*Salem.*)

33081 to 33085. MECONOPSIS spp.

From Glasnevin, Dublin, Ireland. Presented by Mr. F. W. Moore, keeper, Royal Botanic Gardens. Received March 9, 1912.

Seeds of the following:

33081. MECONOPSIS CAMBRICA Viguiet.

See No. 33011 for previous introduction.

33082. MECONOPSIS CAMBRICA Viguiet.

Flore pleno.

33083. MECONOPSIS INTEGRIFOLIA (Maxim.) Franch.

See Nos. 13340 and 31269 for previous introduction.

33084. MECONOPSIS PANICULATA (Don) Prain.

Distribution.—A herbaceous perennial with yellow flowers, found on the slopes of the Himalayas in the provinces of Nepal, Sikkim, and Bhutan in northern India.

33085. MECONOPSIS WALLICHII Hooker.

See No. 25070 for previous introduction.

33086 to 33088. DIOSPYROS KAKI L. f.

Persimmon.

From Okitsu, Japan. Presented by Mr. T. Tanikawa, in charge, Government Horticultural Experiment Station. Received March 9, 1912.

Cuttings of the following; quoted notes by Mr. Tanikawa:

33086. "*Zenjimarū*. A sweet variety, with male, female, and complete flowers in the same stock."

33087. "*Fuji*. One of the best astringent varieties in our country."

33088. "*Fuyu*. One of the best sweet varieties in this country."

33089 and 33090. GOSSYPIUM spp.

Cotton.

From Abyssinia. Presented by Mr. Guy R. Love, American vice consul general, Addis Ababa. Received March 9, 1912.

Seeds of the following; quoted notes by Mr. Love:

33089. "*Gojamie*. From Gojam, south of Lake Tsana."

33090. "*Gondarie*. From Gondar, north of Lake Tsana."

"The cotton raised in the Lake Tsana district is of a much superior quality, being of longer fiber and lighter in color."

33091. MEDICAGO SATIVA L.

Alfalfa.

From Bordj bou Arreridj, Algeria. Presented by Mr. F. Couston, agricultural engineer. Received November 8, 1911. Numbered March 11, 1912.

"(Blue flowers.) Spontaneous on the high plateaus at Bordj bou Arreridj; calcareous soils, sometimes very dry." (Couston.)

33092. CUCUMIS SATIVUS L.

Cucumber.

From Yaroslav Province, Russia. Presented by Mr. Joseph A. Rosen, Chief, American Agricultural Bureau of the Governmental Zemstvo of Yekaterinoslav, Russia, at Minneapolis, Minn. Received March 8, 1912.

"Variety *Muromsky*. Originated in the province of Yaroslav, Russia. The earliest variety grown in Russia. Prolific, excellent quality. An open-ground variety, but is frequently grown also under glass." (Rosen.)

33093. DAMMARA ALBA Rumph.

From Buitenzorg, Java. Presented by Mr. H. Wigman, Botanic Garden. Received March 9, 1912.

"This beautiful broad-leaved conifer, related to the noted kauri pine of New Zealand, is worthy of trial in Florida and southern California. Its pyramidal, ever-green character makes it particularly suitable for avenue planting." (*David Fairchild.*)

Distribution.—A tall tree belonging to the pine family, found in the islands of the Malay Archipelago.

33094. BELOU MARMELOS (L.) Lyons.**Bael.**

From Peradeniya, Ceylon. Presented by Mr. H. F. Macmillan, Curator, Royal Botanic Garden. Received March 9, 1912.

See No. 24450 for description.

33096. CHIOCOCCA ALBA (L.) Hitchc.

From Palm Beach, Fla. Presented by Mr. J. B. Donnelly, manager, Clarke Estate. Received March 4, 1912.

"This plant when growing in the jungle climbs on trees, but when in the open and cut back a couple of times it makes a nice shrub that is covered with white berries which remain on all winter." (*Donnelly.*)

Distribution.—From the West Indies and Mexico, southward to Brazil and Peru.

33097. FICUS CARICA L.**Caprifig.**

From Chenoua, Algeria. Presented by Dr. L. Trabut, Algiers, Algeria. Received March 12, 1912.

"Very early." (*Trabut.*)

33098. PHASEOLUS CALCARATUS Roxb.

From Cuba. Presented by Mr. Robert L. Luáces, Camaguey, who secured them from Mr. Luis de Megret, editor, *El Agricultor Práctico*, Guantánamo, Oriente, Cuba. Received March 12, 1912.

"Little Devil, or Mambí, bean. An indigenous legume, found growing wild in the woods of Oriente Province, especially in the valley of Guantánamo. A climbing vine of vigorous growth that covers and smothers the tree over which it grows; for this reason the native country people call it 'Little Devil.' It is also called 'Mambi'¹ because it was discovered as an edible by the Cuban soldiers during the war of 1868-1878.

"It produces its fruits in clusters formed of eight or more small pods, each containing from six to eight beans. It starts to grow in early springtime and matures its fruit in autumn, the plant dying after fruiting. The pods must be gathered ripe. When allowed to dry on the vine they will burst, throwing the seed afar with much violence. The beans are very heavy, considering their small size, and are delicious in taste, selling in the local market at from 8 to 10 cents per pound." (*Megret.*)

33099. STRYCHNOS sp.

From Sombrero Negro, Nicaragua, near Rama. Collected by Mr. Carlos Berger, January, 1912. Received through Mr. W. E. Safford, Bureau of Plant Industry, March 12, 1912.

"Local name, *Madronito*. Roots used as a remedy for snake bites. Pulp of fruit edible." (*Safford.*)

¹"'Mambi', name given the Cuban soldier during the war of 1868-1878, from man (English) and bi (Latin)." (*Luáces.*)

33100. ADANSONIA DIGITATA L.**Baobab.**

From Cuba. Presented by Mr. Robert L. Luáces, Camaguey, who secured them from Mr. Luis de Megret, editor, *El Agricultor Práctico*, Guantanamo, Oriente, Cuba. Received March 13, 1912.

"The tree that produces this fruit is native to Africa and was introduced into Oriente Province by the French immigrants from Haiti. The tree, from its gigantic corpulence, leaf, and branch formation, looks very much like the Ceiba. The fruit is long, gourd shaped, of very hard skin, containing, enveloped in a white pasty or starchy stuff, a large number of small seeds. This starchy substance when water is applied to it is somewhat like arrowroot, its taste is subacid, and makes a good refreshing soft drink with sugar and water.

"It receives its name, 'monkey-bread', from the similarity of its seeds to the face of a monkey.

"It can be propagated from seed or from cuttings. This last method is the best, giving quickest results, for it takes some 10 years to grow it from seed. The fruit is hard and will keep for a long time." (*Megret.*)

Seeds.

33101. (Undetermined.)

From Kiayingchow, China. Presented by Mr. George Campbell. Received February 21, 1912.

"This is a rather handsome tree, 25 or 30 feet high; the curious fruits have a pleasant nutty flavor and are ripe about the last of November.

"I saw in a wayside inn up near the Fukien border three great planks of the wood of this *Pit-kiu* or *Kit-kiu* tree. They were 16 to 18 feet long and 18 inches wide and about 3 inches thick. The owner told me he got five such planks out of one tree and sold two of them for \$10 apiece. They are in demand for store counters, as they take a good polish and are very hard and dense in texture. But the fruit is the most interesting part of the tree. The fruit looks like the meat of hickory nuts, all crinkly, and is similar in taste. It is thin skinned and the texture is also somewhat like the hickory nut. The whole fruit is eaten, and there is a sort of string that comes from the fruit which you strip off as you eat. The seeds are little and black in color and are by themselves on the end of the fruit. They resemble a bedbug in appearance. This fruit is not of commercial value. The fruit is sold in China, however." (*Campbell.*)

33102 and 33103.

From Nice, Alpes-Maritimes, France. Presented by Dr. A. Robertson Proschowsky, Jardin d'Acclimatation Les Tropiques, Chemin des Grottes Sainte-Helene. Received March 11, 1912.

Seeds of the following; quoted notes by Dr. Proschowsky:

33102. BOCCONIA FRUTESCENS L.

"These seeds are so oily that if they were produced in large enough quantity perhaps some use could be made of them. The plant is very beautiful and forms a large evergreen shrub of striking foliage."

Distribution.—Tropical America, extending northward to the valley of the Cordova in Mexico; also in the West Indies.

33103. GREWIA sp.

"There is only a very little flesh on these fruits, but it is sweet and agreeable. As a beautiful flowering and very drought-resistant shrub it already has some value.

33104. FICUS RUBIGINOSA Desf.**Port Jackson fig.**

From Sydney, New South Wales, Australia. Presented by Prof. J. H. Maiden, Director and Government Botanist, Royal Botanic Garden. Received July 3, 1911. Numbered March 15, 1912.

"This grows in the coast districts, but extends a little more westerly than does *Ficus macrophylla* (S. P. I. No. 33071) and has shown greater adaptability to drier localities than that species." (Maiden.)

Seeds.

Distribution.—A tree found in the valleys of streams in New South Wales, Australia.

33105. MEIBOMIA HETEROCARPA (L.) Kuntze.

From Peradeniya, Ceylon. Presented by Mr. H. F. Macmillan, curator, Royal Botanic Garden. Received March 9, 1912.

33106 to 33110. COLOCASIA sp.**Taro.**

From Hilo, Hawaii. Presented by Mr. F. A. Clowes, Superintendent, Hawaii Substations. Received March 13 and 14, 1912.

Tubers of the following varieties:

33106. *Manapiko.*

33109. *Kuoho.*

33107. *Wehiwa.*

33110. *Lehua.*

33108. *Elepaio.*

33111 to 33118. VITIS VINIFERA L.**Grape.**

From Bhamdun, located on the western slope of Mount Lebanon, Syria. Presented by Mr. Alfred Ely Day, Syrian Protestant College, Beirut, Syria. Received March 15 and 16, 1912.

Cuttings of the following; quoted notes by Mr. Day:

33111. "*Jauzâni*. Large, white, thin-skinned berry, produced in crowded clusters. Sometimes the berries are partly large and partly small, in which case they are called 'hen and chickens.' The leaves are used in cooking, wrapped around small rolls of rice and chopped meat. This is one of the best grapes."

33112. "*Shahmâni*. Large, round, yellowish berry; firm pulp."

33113. "*Shatawi*. Not very sweet, a little larger, has a thicker skin, and ripens later than *Kâsûfi-dakar* (S. P. I. No. 33074). *Shatawi* means belonging to winter."

33114. "*Âsmi*. This vine has short branches; clusters large; berries round and greenish, skin very thin. Much esteemed."

33115. "*Miksâsi*. The most useful grape of Lebanon for eating, wine, raisins, and sirup. Berries are of moderate size, white, with thin skin and soft pulp. Ripens early."

33116. "*Jbâ'i*. Berry black with hard skin, very firm and solid, not very juicy, good for preserving."

33117. "*Zeini*. Long white berries, moderate in size, sweet with a little acidity."

33118. "*Kâsûfi-inti*.¹ Like *Kâsûfi-dakar*¹ (S. P. I. No. 33074), but sweeter, thinner skinned, larger berries and clusters. Ripens after *Miksâsi* (S. P. I. No. 33115), but before *Shatawi* (S. P. I. No. 33113). Called *Kâsûfi* because the berries with their stalklets easily break off from the clusters."

¹"*Inti*' means female, and '*dakar*,' male."

33119. AESCHYNOMENE ELAPHROXYLON (Guill. and Perr.) Taubert.
Ambach.

From Lawang, Java. Presented by Mr. M. Buysman, Botanic Garden. Received March 16, 1912.

"This is a Senegambian plant, much cultivated in several parts of Africa and also in Egypt. The only use is that of the wood, which is light and perhaps might be taken as a surrogate for cork. The stem gets very thick with age, but the height is moderate." (*Buysman.*)

Distribution.—A leguminous, spiny shrub up to 20 feet high, with large orange-colored flowers, growing in or near water on the west coast of Africa in Upper Guinea and Lower Guinea, and from the valley of the White Nile to the Mozambique district on the east coast.

33120. FRAXINUS ORNUS L. **Ash.**

From Germantown, Philadelphia, Pa. Purchased from Mr. Conyers B. Fleu, jr. Received March 18, 1912.

This seed was procured for experimental purposes in the semiarid regions of the United States.

33121 to 33126. ZEA MAYS L. **Corn.**

From Ecuador. Presented by Mr. Edward Harold Pound, Washington, D. C. Received March 16, 1912.

Seeds of the following:

33121 to 33124. From Chillo-Ordoñez, Quito, Ecuador.

33125 and 33126. From Hidalgo hacienda, Tumbaco, near Quito, Ecuador.

33127 to 33132. CARICA PAPAYA L. **Papaya.**

From Buitenzorg, Java. Presented by the Director, Botanic Gardens. Received March 18, 1912.

"Seed of different varieties of papayas, producing fruits of various shape and outline. The quality is good and there is but little difference between them." (*The Director.*)

33135. SALIX FRAGILIS L.

(*♂* var. *pendula*.)

From Algeria. Presented by Dr. L. Trabut, Algiers. Received March 19, 1912.

"An Algerian ornamental." (*Trabut.*)

33136. GOSSYPIMUM OBTUSIFOLIUM Roxb. **Cotton.**

From Algeria. Presented by Dr. L. Trabut, Algiers. Received March 19, 1912.

"Variety *africanum*. Perennial cultivated in the oasis. The very mediocre cotton is used by the natives to mix with wool. Oasis Insalah, The Djerid." (*Trabut.*)

33137. CHAETOCHLOA COSTATA (Roxb.) Skeels.

From Sibpur, near Calcutta, India. Presented by Maj. A. T. Gage, Superintendent, Royal Botanic Garden. Received March 19, 1912.

See No. 32399 for previous introduction.

33138 to 33179.

From Paris, France. Presented by the Director, Museum of Natural History.
Received March 19, 1912.

Seeds of the following:

33138. × ACER BOSCH Spach.

Maple.

Considered to be a hybrid between *Acer tataricum* L. and *A. pensylvanicum* L.

33139. ALNUS MARITIMA (Marsh.) Muhl.

Alder.

An ornamental shrub or small tree with handsome, shining foliage, attractive in autumn with its male catkins.

Distribution.—The eastern coast of North America, and in Japan, Chosen (Korea), and Manchuria.

33140. AMPELOPSIS HUMULIFOLIA Bunge.

See No. 32917 for previous introduction.

33141. AMPELOPSIS ORIENTALIS (Lam.) Planchon.

Distribution.—Shady banks in Cilicia, Syria, and Armenia.

33142. ARALIA CACHEMIRICA Decaisne.

See No. 30285 for previous introduction.

33143. ASPARAGUS OFFICINALIS L.

Asparagus.

Distribution.—The countries at the western end of the Mediterranean from Spain and Italy and the adjacent islands to northern Africa and the Canary Islands.

33144. ASPARAGUS MARITIMUS Miller.

Asparagus.

Distribution.—Southern Europe, extending from Spain eastward through Italy and Greece to the Caucasus region, and in southwestern Siberia.

33145. ASPARAGUS OFFICINALIS CASPIUS (Schult.) Asch. and Graebn.

Asparagus.

Distribution.—In the parts of southeastern Russia and northern Persia bordering on the Caspian Sea, and occasionally in the countries along the northern coast of the Mediterranean.

33146. ASPARAGUS OFFICINALIS PROSTRATUS (Dum.) Baker. **Asparagus.**

Distribution.—Considered to be a seashore form of *Asparagus officinalis* L. found on the dunes along the coast of northwestern Europe.

33147. ASPARAGUS TENUIFOLIUS Lam.

Asparagus.

A hardy shrub bearing very large, red berries.

Distribution.—The southern part of Europe, extending from France through Italy, the Balkan Peninsula, and southern Russia to Asia Minor.

33148. ASPARAGUS VERTICILLATUS L.

Asparagus.

See No. 29121 for previous introduction.

33149. BENINCASA HISPIDA (Thunb.) Cogn.

Variety *macrocarpa*.

33150. BETULA ALBA L.

Cut-leaved weeping birch.

Variety *dalecarlica*.

33151. BETULA DAVURICA Pallas.

Birch.

Distribution.—A tree, growing up to 60 feet, found in the valley of the Amur River in eastern Asia.

33138 to 33179—Continued.

- 33152.** *BOCCONIA CORDATA* Willd. Plume poppy.
 Variety *microcarpa*. A hardy herbaceous perennial.
- 33153.** *CELTIS AUDIBERTIANA* Spach. Nettle tree.
- 33154.** *CELTIS AUSTRALIS* L.
 See Nos. 2176 and 19505 for previous introductions.
- 33155.** *COTONEASTER HORIZONTALIS* Decaisne.
 See No. 1595 for description.
- 33156.** *COTONEASTER INTEGERRIMA* Medic.
 See Nos. 29666 and 22695 for previous introductions.
- 33157.** *COTONEASTER MICROPHYLLA* Wallich.
 See No. 32934 for previous introduction.
- 33158.** *COTONEASTER MULTIFLORA GRANATENSIS* (Boiss.) Wenz.
 See No. 29969 for previous introduction.
- 33159.** *COTONEASTER PANNOSA* Franchet.
 See No. 32936 for previous introduction.
- 33160.** *COTONEASTER RACEMIFLORA NUMMULARIA* (Fisch. and Mey.) Dipp.
- 33161.** *CRATAEGUS AMBIGUA* Becker. Hawthorn.
 See No. 30289 for previous introduction.
- 33162.** *CRATAEGUS KOROLKOWI* Regel. Hawthorn.
 See No. 30290 for distribution of this species.
- 33163.** *EUONYMUS RADICANS CARRIERI* (Vauv.) Nich.
 A low shrub with ascending and spreading branches.
- 33164.** *FRAXINUS PENNSYLVANICA* Marshall. Red ash.
- 33165.** *GLEDITSIA MACRACANTHA* Desf.
Distribution.—A tree with large spines, closely related to *G. sinensis* Lam. and only known under cultivation.
- 33166.** *JUGLANS PYRIFORMIS* Liebm.
Distribution.—On the slopes of the mountains at an elevation of 6,000 feet in the vicinity of Orizaba in southern Mexico.
- 33167.** *MALUS Cerasifera* Spach.
Distribution.—A form of *Malus baccata* (L.) Moench probably of hybrid origin; found in Siberia.
- 33168.** *PHYSALIS PHILADELPHICA* Lam.
- 33169.** *PISTACIA LENTISCUS* L. Mastic.
 See No. 9426 for description.
- 33170.** *PRUNUS DOMESTICA* L. Plum.
 Variety *armenioides*.
- 33171.** *PYRUS CANESCENS* Spach. Pear.
 See No. 29973 for previous introduction.
- 33172.** *PYRUS COMMUNIS PYRASTER* L. Pear.
Distribution.—A form of the common pear having fruits the size and shape of a cherry, originating in the northeastern part of Persia.
- 33173.** $\times$ *PYRUS OBLONGIFOLIA* Spach. Pear.
Distribution.—Considered to be a hybrid between *Pyrus amygdaliformis* Villars and *P. nivalis* Jacq.

33138 to 33179—Continued.**33174 to 33179. SOLANUM NIGRUM L.****Nightshade.****33174.****33177. Variety *miniatum*.****33175. Variety *flavum*.****33178. Variety *oleraceum*.****33176. Variety *guineense*.****33179. Variety *villosum*.****33180 and 33181. JUGLANS REGIA L.****Walnut.**

From China. Presented by Mr. Samuel S. Knabenshue, American consul general, Tientsin, China. Received at the Plant Introduction Field Station, Chico, Cal., March, 1912.

Seeds of the following; quoted notes by Mr. Knabenshue:

33180. "This hard-shelled variety grows to the westward of Changli, in this province (Chihli), and Shansi. It appears to grow only in the hill country. The nuts marketed in Tientsin come either from the mountainous region north and west of Peking or from the mountains of Shantung. These nuts came from the western hills at Peking and are very fair samples of the hard-shelled variety."

33181. "This soft-shelled variety was also obtained from Changli. This town lies on the edge of the hill country, and the district around it, so far as can be learned, is the only one producing the soft-shelled nuts. I am unable to obtain any precise information as to the nature of the soil. The hills of the vicinity are evidently of volcanic origin, though extremely ancient in geologic time. The soil, to all appearance, is like that of the Great Plain of China, an alluvial formation, brought down from the loess deposits to the west of Peking. The heavy wind storms to the north, which bring the much-dreaded tornadoes of dust, in the course of centuries must have added materially to the soil of this section of China. The wind brings down from the Gobi Desert a very fine, yellow sand apparently."

33182 and 33183.

From the Philippine Islands. Presented by Mr. O. W. Barrett, Chief, Division of Experiment Stations, Bureau of Agriculture, Manila. Received March 20, 1912.

Seeds of the following; quoted notes by Mr. Barrett:

33182. FICUS sp.

"A small tree, rarely branching. Leaves linear lanceolate, from 1 to 1½ feet in length, dark green, the peculiar fruits being produced in the axils of the leaves. As the plant grows the leaves are shed, with the exception of a number at the top, making the crown of the plant appear not unlike a bird's-nest fern. It should make a very attractive greenhouse subject."

33183. LAGERSTROEMIA SPECIOSA (L.) Pers.

"A small shrubby tree, indigenous to the Philippines, blooming in the spring, when it is one of the most striking plants in the Philippines."

33184. ANNONA CHERIMOLA Miller.**Cherimoya.**

From Los Angeles, Cal. Presented by Mr. Charles F. O'Brien. Received March 21, 1912.

"This cherimoya on my ranch was grown from seed produced by a tree originally brought from Peru by a brother-in-law of a Mr. Miller, who now lives in Hollywood, Cal. The old tree was killed some years ago.

"Mr. Miller's brother-in-law informed him that he found the young tree growing along the bank of a stream in the interior of Peru at a considerable elevation. He stated that the trees grown there grew to large size and produced fruit that sometimes weighed as much as 14 pounds. He also stated that at the time the fruit ripened in that part of Peru it formed the principal article of diet of the native Indians.

"I have seen specimens of the cherimoya of Mexico growing here, but the fruit is not so large as this Peruvian fruit, nor does the tree attain such great size. The foliage is also smaller.

"In handling my tree I have found that it should be vigorously pruned early in the spring. It gives best fruiting results with that treatment.

"These seeds are from the finest fruit borne by the tree last year; it weighed 2 pounds 6 ounces, was perfect in shape, with a very thin skin; meat white and of very fine texture. It was, in fact, the finest specimen I have ever obtained from this tree.

"This particular tree is the finest cherimoya in all southern California, and the finest I have seen anywhere. The fruit is also much superior to that which is now being offered in the market here." (*O'Brien*.)

33185. ACACIA SCORPIOIDES (L.) W. F. Wight.

From Algeria. Presented by Dr. L. Trabut, Algiers. Received March 21, 1912.

"A variety cultivated at Biskra." (*Trabut*.)

33186 to 33188.

From Italy. Presented by Mr. Willy Müller, Nocera Inferiore, Italy. Received March 21, 1912.

Seeds of the following:

33186. AKEBIA LOBATA Decaisne.

See Nos. 24744, 26424 and 30855 for previous introduction.

33187. CUCUMIS MELO L.

Muskmelon.

From Castellammare.

33188. CUCUMIS MELO L.

Muskmelon.

From Nocera.

33189. JUGLANS REGIA L.

Walnut.

From Sorrento, Italy. Procured by Mr. W. B. Fiske, of the Bureau of Entomology, United States Department of Agriculture, stationed at the Gypsy-Moth and Alfalfa-Weevil Laboratory at the R. Scuola Superiore D'Agricoltura, Portici, from Mr. Pasquale D. Luca, head gardener, at the request of Mr. William W. Handley, American consul, Naples, Italy. Received March 22, 1912.

"*Sorrentina*. The trees from which these cuttings were taken were grown by me in ground at Meta di Sorrento belonging to the estate of Dr. Corrado Buggiero. The shoots were all from the same variety and were taken from two trees. The *Sorrentina* is a large and majestic tree with a large crown and great branches while still young, and covered with a clear gray bark which with age becomes split. The leaves are quite large, alternately pennate with 5 to 9 leaflets, and when fresh they have a peculiar odor. The fruit is an oblong drupe and terminates in a rather long point. The pericarp is rather thin and the endocarp is very fleshy." (*Pasquale D. Luca*.)

33190. PHOENIX DACTYLIFERA L.

Date.

From Panjgur, India. Received through Mr. Stuart K. Lupton, American consul, Karachi, India. Received March 23, 1912.

"I am informed that to properly mature dates a steady sustained, hot, dry wind for about 30 days is necessary and that this condition prevails nowhere in the consular district except in the neighborhood of Panjgur." (*Lupton.*)

This is probably the famous *Mozati* date introduced under S. P. I. No. 8762.

33191. *MISCANTHUS JAPONICUS* (Thunb.) Oerst.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received March 23, 1912.

"This has been found in our experimental work to produce a light bulky paper in many respects similar to that made from esparto. The yield of fiber is up to the average of esparto, and there may be areas where the plant can be grown especially for paper making. It thrives on the poorer soils in this region (Washington, D. C.) and has been grown with some success even in Maine; the excessive winter killing here, however, would prevent its becoming a successful crop plant." (*Charles J. Brand.*)

Seeds.

Distribution.—The provinces of Kiangsu, Kiangsi, and Kwangtung in China, and in Japan and the Malay Archipelago.

33192. *TERMINALIA CATAPPA* L.

Katappa.

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, Superintendent, Royal Botanic Gardens. Received March 23, 1912.

Distribution.—A tree, often 80 feet high, found in the plains of India and generally cultivated in tropical countries.

33194 to 33201. *ROSA* spp.

Rose.

From Kew, England. Presented by Dr. David Prain, Director, Royal Botanic Garden. Received March 19, 1912.

Cuttings of the following, procured for breeding experiments:

33194. *ROSA BEGGERIANA* Schrenk.

Rose.

Distribution.—A shrub, growing as high as 10 feet, found on mountain slopes from 5,000 to 10,000 feet in elevation from the Caspian Sea and Persia eastward through Turkestan and Afghanistan to Mongolia.

33195. *ROSA WEBBIANA* Wall.

Rose.

Distribution.—Dry slopes of the Himalayas in northern India from Kashmir to western Tibet at an elevation of 5,000 to 13,500 feet.

33196. *ROSA ACICULARIS NIPPONENSIS* (Crepin) Koehne.

Rose.

Distribution.—The slopes of Mount Fujiyama, in Japan.

33197. *ROSA SPINOSISSIMA* L.

Rose.

Variety *hispida*.

33198. *ROSA SPINOSISSIMA* L.

Rose.

Variety *lutea*.

33199. *ROSA CINNAMOMEA MALYI* (Kern) Skeels.

Rose.

(*Rosa malyi* Kern 1869, in *Oesterreichische Botanische Zeitschrift*, vol. 19, p. 325.)

Cuttings of this rose were received under the name *Rosa malyi*. In 1902 this form was referred by Keller (Ascherson and Graebner, *Synopsis der Mitteleuropäischen Flora*, vol. 6, p. 305) to *Rosa pendulina*, which was published by 74600°—Bull. 282—13—6

33194 to 33201—Continued.

Linnaeus in 1753 on page 492 of the *Species Plantarum*. But on page 491 of the same work Linnaeus published the name *Rosa cinnamomea*, which is generally considered to be the same as *R. pendulina*. Keller uses the name *R. cinnamomea* for the species described under that name in 1759 by Linnaeus (*Systema Naturae*, ed. 10, vol. 2, p. 1062). According to present rules of botanical nomenclature, *R. cinnamomea* must be used for the first species described under that name, and our plant being a form of that species, is here placed under it.

Rosa cinnamomea malyi was first discovered by Herr Maly on the slopes of the mountains in Dalmatia, and was by him introduced into cultivation.

33200. *ROSA MACROPHYLLA* Lindl.

Rose.

33201. *ROSA FEDTSCHENKOANA* Regel.

Rose.

Distribution.—A little known species from Turkestan.

33202. *ROSA HEMISPHERICA* Herrmann.

Rose.

From Bitton Vicarage, Bristol, England. Presented by Rev. Henry N. Ellacombe. Received March 19, 1912.

Procured for breeding experiments.

33203 and 33204. *DIOSPYROS KAKI* L. f.

Persimmon.

From Tokyo, Japan. Presented by Mr. T. Watase, Tokyo Plant, Seed & Implement Co. Received March 23, 1912.

Cuttings of the following, quoted notes by Mr. Watase:

33203. "*Uzaemon*. Astringent variety."

33204. "*Myotan*. Late, sweet variety."

"The above cuttings were those with pedicels left from staminate flowers."

33205 to 33234.

From Granada, Spain. Purchased from Mr. Pedro Giraud, at the request of Mr. Walter T. Swingle, Bureau of Plant Industry. Received March 23, 1912.

Quoted notes by Mr. Walter T. Swingle, unless otherwise noted.

"The following collection of grafted plants, rooted cuttings, and scions or cuttings embraces some of the principal varieties of fruits grown in Granada. Dr. Gustav Eisen has shown that many of the so-called Mission varieties of fruits grown in California in the early days really originated in Granada. It is hoped that some of the varieties in the following list will prove to be of considerable value. The shipment was made largely to test the possibility of shipping plants in good order from central Spain to the United States."

33205. *CRATAEGUS AZAROLUS* L.

Azarol.

"*Encarnado*. The azarol represents a type of fruit whose cultivation has been much neglected in the United States. These fruits, which ripen from August to October in Spain and France, are from a half inch to an inch in diameter or even more, and have a delicious, subacid flavor, with flesh of a melting character. In flavor and texture its fruits resemble loquats in many respects. These plants are grafted on the common hawthorn and are said to grow in all kinds of soil, both dry land and under irrigation. The variety in question is flesh color, supposed to be of Italian origin."

33205 to 33234—Continued.

33206. *POPULUS* sp.

Poplar.

"*Chopo*. This is a remarkable form of poplar commonly grown about Granada, striking because of the almost complete absence of true lateral branches, the stems being clothed with twigs which, as is common in poplars, are sooner or later thrown off by separative layers near the base. Because of this habit of growth, it can be planted very close together. It is said to give an enormous yield of wood, because of its rapid growth and the absence of branches."

"This tree is one of the best suited for forming poplar plantations in humid soil and along the shores of rivers. The poles used in scaffolding are generally made of this species and the wood is that most generally used for the making of boxes for small shipments." (*Pedro Giraud*.)

33207 to 33209. *PYRUS COMMUNIS* L.

Pear.

33207. "*Favorita*. This pear is described as follows: Fruit very large, lemon yellow, flesh buttery, sweet, savory. Ripens the middle of August. A summer pear."

33208. "*Pera de Roseta*."

33209. "*Pera de Aragon*. Fruits large, yellow, flesh very fine, very juicy and sweet, ripening December and January. This is perhaps the pear which is exported all through southern Spain and even to Algeria and Morocco throughout the winter months. This pear, which is said to come from Aragon, is a very broad, short fruit and can be shipped great distances, standing the roughest kind of handling. In fact, the pears are often handled like so much coal."

33210 to 33212. *MALUS SYLVESTRIS* Miller.

Apple.

33210. "*Pero Blanco de Ronda*. In Spain all green apples, especially those of elongated form, are called, not *manzana*, but *peros*, which has led to considerable confusion on the part of foreigners because of the similarity of this latter word with *pera*, which is pear. Perhaps because of this fact many of the best Spanish apples seem to be relatively little known to the horticulturists of other countries. This variety, the famous *Pero Blanco de Ronda*, often called simply *Pero de Ronda*, is a very delicious apple and one which is well adapted to export trade. It is a winter apple, ripening in Spain in the month of January."

33211. "*Pero Blanco de Dusal*. This is another variety of *pero*, about which no information could be secured except that it is a winter variety ripening in January."

33212. "*Pero Encarnado de Priego*. Another variety which the name would indicate to be flesh colored; said to ripen from November to January. No description could be found of this variety."

33213 and 33214. *CYDONIA OBLONGA* Miller.

Quince.

33213. "*Antequera*. The Spanish quinces are famous for their high quality, and the best are said to come from Antequera."

33214. "*de Antequera*. Probably the same as 33213."

33205 to 33234—Continued.

33215 to 33218. *AMYGDALUS COMMUNIS* L.

Almond.

33215. "*Malagueña*. This is the famous Jordan almond, which is exported so largely from Malaga. I was told at the American consulate that some \$800,000 worth of almonds had been exported from the port of Malaga alone during the year 1911. These exports consist largely of the *Malagueña* variety. Jordan almonds are classified by the wholesale dealers as to number per ounce. They run from 15 to 30 or more per ounce. The English market takes the very large size, the American market taking most of the 30's and other small sizes. Out of 100,000 boxes only three or four hundred would be as large as 15 to 16 to the ounce. This is called the export variety by the cultivators around Malaga, after the Spanish word 'exportacion.' It is grown in very dry situations and is properly speaking a dry-land crop of very great importance. Pedro Giraud, from whom the plants were secured, says of almonds in general that they give best results in warm, dry, rocky, limestone soils."

33216. "*Almendro de Esperanza*. A variety of almond recommended for culture by Mr. Giraud."

33217. "*Almendro de la P*. This is said to be a large, early variety of almond."

33218. "*Almendro del Desmayo*. This is an especially valuable variety of almond for testing on account of its hardiness. Pedro Giraud says: 'The variety of almond *del Desmayo* is the most resistant to frost, which is caused by the peculiar attachment of the flower, which is turned downward, its corolla and sepals protecting it against the action of frost, in this way insuring the fertility of this sort when all other varieties would have their crops destroyed.'"

33219 to 33221. *AMYGDALUS PERSICA* L.

Peach.

"As to these three varieties of peaches no definite information was available, but as the Spanish peaches are famous for their quality, any variety which is propagated is likely to be good."

33219. "*Vanqueur*."

33220. "*Campiel Amarillo*."

33221. "*Tempeanos Junio*."

33222 and 33223. *PRUNUS AVIUM* L.

Cherry.

33222. "*Garrafal*. A giant cherry having firm, sweet flesh."

33223. "*Garrafal le Grand*. Another large variety of cherry, possibly of French origin. Said to ripen in June."

33224. *PRUNUS DOMESTICA* L.

Plum.

"*Ciruela de Fraile*. A variety ripening in June, said to be of excellent quality."

33225. *OLEA EUROPEA* L.

Olive.

"*Gordal* or *Sevillana*. This is the famous variety which yields the large, green, pickled olives so common in America. It is largely cultivated in the zone immediately about Seville, where its culture is said to succeed better than in any other part of Spain. They run from about 70 to 200 per kilo, or about 30 to 90 to the pound. These enormous olives are of beautiful appearance, but by the Spaniards are not considered to be of as good quality as some

33205 to 33234—Continued.

of the other varieties, such as the *Manzanillo*. The *Sevillana* variety is graded very carefully, running 70, 80, 90, 100, and so on per kilo, and this grading requires to be done very carefully, making the olives for the American market much more expensive than for the Argentine and other markets which do not require such an excessively careful grading."

33226. OLEA EUROPEA L.**Olive.**

"*Hermanos*. This is probably the *Quatro Hermanos* olive as noted by Dr. Eisen in the vicinity of Granada, which variety, as the name indicates, is peculiar in having four fruits borne together, arranged in the form of a cross. Beyond this but little is known as to the variety, which may, however, be of importance, since very good olives are grown in this region."

33227 to 33229. PUNICA GRANATUM L.**Pomegranate.**

"Since the city and province of Granada get their name from the pomegranate, it is to be expected that this fruit would have attained great perfection in this region. The following collection includes three of the principal varieties as grown about Granada. Mr. Pedro Giraud recommends that they be grown in espalier against a wall, where they can be irrigated a little during the hot, dry Spanish summer. There is a large exportation of pomegranates to England, and a small quantity reaches the United States. These are not shipped from Granada, but from ports in the east of Spain, especially Valencia."

33227. "Negro monstruoso."

33228. "*Granado de Jativa*. This is said to be one of the most appreciated varieties in the region of Granada and is said to be without seeds."

33229. "Granado de Rogises."**33230 to 33233. FICUS CARICA L.****Fig.**

"The figs of Granada are famous for their abundance and good quality. Dr. Gustav Eisen has shown that the California mission fig came originally from Spain and probably was imported from Granada. It is difficult to imagine a variety better adapted to California conditions, and it is hoped that some of the following will prove equally well suited."

33230. Albanes.**33231. Pata Mulo.****33232. Isabella.**

For description see No. 32878.

33233. Breval Negra.**33234. CORYLUS AVELLANA L.****Hazelnut.**

"*Rouge Ronde*. Spain furnishes the bulk of the hazelnuts that enter into the world's commerce, whole regions being given up to this remunerative culture in the north of Spain. It is said to prefer rather light, cool soils and to grow well with more or less shade. The trees are set at short distances apart. From its name, meaning the 'round red,' the variety would seem to be of French origin."

33235. CARICA PAPAYA L.**Papaya.**

From Philippine Islands. Secured through Mr. Alvin R. Schwab from Mr. J. A. Dunn of Akron, Iowa, by Mr. E. C. Green, in charge, South Texas Plant Introduction Garden, Brownsville, Tex. Received March 22, 1912.

Seeds.

33236 to 33238.

From Buitenzorg, Java. Presented by The Director, Department of Agriculture.

Received March 23, 1912.

Seeds of the following:

33236. CORCULUM LEPTOPUS (Hook. and Arn.) Stuntz.

Seed of this polygonaceous climber were received under the name *Antigonon leptopus* Hook. and Arn. This generic name, used but not technically published in 1837 by Endlicher (*Genera Plantarum*, p. 310), is antedated by *Antigona*, published in 1827 by Velloso (*Flora Fluminensis*, p. 186, vol. 4, pl. 145). As no other name has been suggested for the genus, *Corculum*, the diminutive of the Latin "cor" (heart), is used in reference to the diminutive heart-shaped rose-colored flowers.

Variety *alba*. See No. 19619 for description.

33237. CITRUS DECUMANA (L.) Murray.**Pomelo.**

"*Djerok pandan*."

33238. DRACONTOMELON DAO (Blanco) Merrill and Rolfe.**Dao.**

See No. 32336 for previous introduction.

33239. BRASSICA PEKINENSIS (Lour.) Skeels. Pai tsai cabbage.

From Nanking, China. Presented by Mr. Joseph Bailio, University of Nanking.

Received March 20, 1912.

Shantung.

33241 to 33248. SACCHARUM OFFICINARUM L. Sugar cane.

From Alighur, United Provinces, India. Presented by Dr. Parr, Agricultural

College. Received March 23, 1912.

Cuttings of the following:

33241. *Saretha*.

33245. *Kinar*.

33242. *Khera*.

33246. *Chiu*.

33243. *Merthi*.

33247. *Mungo*.

33244. *Dhaur*.

33248. *Sonabeli*.

33249. PHRAGMITES KARKA (Retz.) Trin.

From Japan. Purchased from the Yokohama Nursery Co., Yokohama. Received

March 26, 1912.

Udono-yoshi. "A perennial grass growing in marshy places. Its roots creep under the ground and shoot up stalks to a height of about 6 feet, bearing panicles at the tops. The stalks resemble small bamboos, being slender, light, and lustrous, and they are used to make blinds. The thickness of the stalk depends on the fertility of the ground. Those growing by seacoasts are slender, flexible, and strong. This grass is planted in watersides to protect mud from being washed away by waves. Its young sprouts are edible. Those produced in Udono—village of Province Setzu—are called *Udono-yoshi*, and are very famous for their large and long stalks. They are used to make *Shichiriki*, a musical instrument." (*Useful Plants of Japan, Agricultural Society of Japan, 1895, pp. 222-223.*)

See No. 21957 for previous introduction.

33250 to 33255. ARALIA CORDATA Thunb.**Udo.**

From Japan. Presented by Prof. Y. Kozai, Director, Imperial Agricultural Experiment Station, Nishigahara, Tokyo. Received March 26, 1912.

33250 to 33255—Continued.

Roots of the following; quoted names and notes by Prof. Kozai:

"Varieties universally cultivated in Kyoto."

33250. "*Yozaemon*. Red, early."

33251. "*Hanza*. Late."

33252. "*Fushiaka*. Node red, middle."

"Varieties universally cultivated in Saitama, near Tokyo."

33253. "*Shiro*. White, very early."

33254. "*Nakate Usu-Aka*. Rosy, middle."

33255. "*Kan-Udo*. Red, extra early."

33256 and 33257.

From Algeria. Presented by Dr. L. Trabut, Algiers. Received March 27, 1912.

33256. *TYPHA ELEPHANTINA* Roxb.

From Kodjaberi.

"This giant Typha is closely related to the rare *T. elephantina* of Java. This Typha has leaves which may attain 4 meters in length. It occurs in moist regions, but not in water. The tufts have a remarkable appearance—one would say a field of Phormium. The leaves are carinate, thick, but not very solid. It is cultivated for cooperage in Algiers, but the leaves break." (*Trabut*.)

Roxburgh, *Flora Indica*, vol. 3, p. 566, calls this elephant grass and says elephants are very fond of it.

Distribution.—Marshes throughout India from the northwest to Assam and southward; also in Algiers.

33257. *SACCHARUM SPONTANEUM* L.

From Bona.

33258. CACARA EROSA (L.) Kuntze.

Yam bean.

From Kingston, Jamaica. Presented by Mr. William Harris, Superintendent of Public Gardens. Received March 27, 1912.

"Flowers white. Seeds red. The root is formed of a number of simple cordlike fibers, several feet in length, stretching under the surface of the ground, bearing in their course a succession of tubers.

"The beans are poisonous, but the root affords a very plentiful supply of very wholesome food. The produce of three plants is usually sufficient to fill a bushel basket. The tubers may either be boiled plain, in which state they are a very good substitute for yams and other roots in common use, or they may be submitted to a process similar to arrowroot, and a starch obtained. This starch is of a pure white, and is equal in every respect to arrowroot. To the taste it is very palatable, is easily digested, and is employed for custards and puddings. Even the trash left after obtaining the starch, and which in the preparation of arrowroot is lost, may, when thoroughly dried, be formed into a palatable and wholesome flour.

"A very excellent flour may also be obtained by slicing the tubers, drying them in the sun, and then reducing to a powder.

"This plant is deserving of being more generally cultivated than it has heretofore been. It ought in a great measure to supersede the arrowroot in cultivation. It can be planted at any season of the year, and the roots are fit for digging in the course of four or five months; the return is infinitely greater than that from arrowroot, and the

proportion of starch also is abundant, so that it can be brought to market at so cheap a rate as to admit of being employed by the calico printers in place of potato starch.

"The Kew Bulletin for 1889, page 17, quotes from letters from Dr. Trimen, Director of the Botanic Gardens in Ceylon, pointing out that the pods when young are not poisonous, but may be eaten like French beans. He wrote: 'They are quite new to Ceylon * * *. The young pods served like French beans are an admirable vegetable, tender and sweet * * *. What constitutes their superiority over the ordinary French beans is the absence of any fibrous string along the sutures of the pod. The large size is also an advantage; they are often 10 or 12 inches long.'

"In Jamaica the seeds are generally sown in March or April. But they can be sown at any time. At Hope Gardens seeds were sown in September. The pods are ready for use as French beans seven months after sowing, and when pods are quite ripe, nine months after sowing, the yams are fit to dig. From one seed sown at Hope Gardens five yams were dug weighing altogether 14 pounds. They generally vary in size from 1 foot to 18 inches long and 4 to 6 inches in diameter." (*Bulletin No. 44 of the Botanical Department of Jamaica, June, 1893, p. 4.*)

33259 and 33260.

From Para, Brazil. Presented by Mr. Walter Fischer, Campo de Cultura Experimental Paraense. Received March 29, 1912.

Seeds of the following, taken from fruits brought in by Mr. Fischer:

33259. *LECYTHIS USITATA* Miers.

Sapucaia nut.

"This is a large tree of the monkey-pot family, native of forests in the region of the Amazon. It has large, urn-shaped fruits of a hard, woody texture, about 6 inches in diameter, with lids measuring about 2 inches across. When ripe the lid separates from the capsule, emitting a sharp sound, which when heard by the monkeys is a signal that the nuts are falling and a scramble and fight to be the first to obtain them ensues; on this account few are left for the trader, and the export is consequently small. The common name of monkey-pot is applied to the capsule when empty." (*Dictionary of Popular Names of Economic Plants, John Smith, 1882.*)

See No. 25435 for previous introduction.

33260. *THEOBROMA GRANDIFLORA* (Willd.) Schum.

Cupuaçú.

"This is a very common fruit here. Its odor and taste may be somewhat nauseating to some, at least if received in too large quantities, but it is really a very luscious fruit. It is used here considerably for making jellies and preserves, which have an aftertaste which may not be liked at first, but which, like that of the guava, when once acquired would become very popular." (*Fischer.*)

Distribution.—Damp shady places in the forests of the Amazon Valley in the provinces of Amazonas and Para, in Brazil.

33261. *EUGENIA* sp.

From Para, Brazil. Presented by Mr. Walter Fischer, Campo de Cultura Experimental Paraense. Received March 29, 1912.

"This is a small-sized tree about 6 inches in diameter and 20 feet high. The fruit is bright red like a wild goose plum and of the same size. The peel or rind is somewhat thick, but edible like the soft juicy pulp that surrounds the one or two large hairy seeds; the flavor is slightly resinous and also suggests strawberry. It makes a good sauce when stewed and is also very good raw." (*Fischer.*)

33262. STENOLOBIUM SAMBUCIFOLIUM (H. B. K.) Seemann.

From La Mortola, Ventimiglia, Italy. Presented by Prof. Alwin Berger, Director, Botanic Gardens. Received March 29, 1912.

Distribution.—An erect shrub, closely related to *Stenolobium stans* (L.) Seemann, from which it differs in having a white-lobed corolla. Found in the vicinity of Montan, Peru, at an elevation of 8,000 feet.

33263. TELFAIRIA PEDATA (Smith) Hook.

From Zanzibar, East Africa. Presented by the Director of Agriculture, Zanzibar Government. Received March 29, 1912.

"A cucumberlike vine, growing over trees of considerable height throughout tropical Africa. The fruit sometimes attains a weight of 60 pounds and contains a large number of oily seeds about 2 inches in diameter. The oil from these seeds is said to be largely used for culinary purposes by the natives. The flowers are of two forms of varying shades of lavender and are several inches across." (*S. C. Stuntz*.)

See No. 23731 for previous introduction.

33264. SALSOLA ARBUSCULA Pallas.**Saxaul.**

From Algiers, Algeria. Presented by Dr. L. Trabut. Received March 29, 1912.

"Saxaul, originally from Turkestan, sown in the Sahara at El Ouad in 1895 and in 1900. It flourishes vigorously in the dunes. Seed collected at El Ouad, south of Biskra." (*Trabut*.)

See Nos. 24555 and 28976 for previous introductions.

33266. CUCUMIS MELO L.**Muskmelon.**

From Persia. Presented by Mr. C. A. Douglas, American Mission, Teheran, Persia. Received March 22, 1912.

"Persian muskmelon. Found in Persia only at the town of Avonikaf, 50 miles from Teheran. An extremely hot climate and a desert country watered from mountain streams. The soil is a red clay, mixed with much gravel. The melon seeds are planted along the little ditches where the water may reach them weekly. They are not sown until late in May. The melon matures late in October and can be kept until December in a dry place.

"The melon is in size and shape something like a small watermelon. On the outside it is dark green, rough, with coarse, light-colored markings. The flesh is yellow, shading into green, quite firm in texture, yet full of water. In taste, it is remarkably sweet and of a peculiar luscious flavor. It is surpassed by no other melon found in this land of the melon, so that even the natives are willing to pay 20 cents apiece for them." (*Douglas*.)

33268. LANGUAS GALANGA (L.) Stuntz.**Galangale.**

From Peradeniya, Ceylon. Presented by Mr. H. F. Macmillan, curator, Royal Botanic Garden. Received March 9, 1912.

A zinziberaceous plant from the eastern Tropics, whose aromatic root furnishes the galangale used by the natives for indigestion.

See Nos. 32036, 32037, and 32837 for previous introductions.

33270. MELILOTUS OFFICINALIS MICRANTHUS Schulz.

From Krassny Koot, Samara, Russia. Collected by Mr. W. Bogdan. Presented by Dr. R. Regel, Bureau of Applied Botany, St. Petersburg, Russia. Received March 27, 1912.

Distribution.—Southeastern Russia and Turkey, and eastward through Armenia, and Persia to Turkestan.

33271. MYRTUS ARAYAN H. B. K.

Arayan.

From Rio Verde, San Luis Potosi, Mexico. Presented by Mr. F. Foex, Director, Agricultural Experiment Station of Rio Verde, through Mr. William A. Taylor, Assistant Chief, Bureau of Plant Industry. Received March 8, 1912.

"These seeds are from a fruit tree of the State of Jalisco. This fruit is well appreciated by young boys, and, above all, by young girls, but not by older people, because they are acid. But they are delicious—First, cooked with sugar; second, dried in sugar powder; third, in sauces for puddings, etc.; fourth, in sirups. These fruits are very small, but when the young trees are 18 months old they can be budded with larger and better varieties." (Foex.)

See No. 30499 for previous introduction.

33272 to 33277.

From Valencia, Spain. Presented by Mr. R. Frazer, jr., American consul, at the request of Mr. Harry B. Chase, Riverside, Cal. Received March 29, 1912. Seeds of the following; quoted notes by Mr. Frazer:

33272 to 33274. CITRULLUS VULGARIS (L.) Schrad.

Watermelon.

"The watermelon of this district, and indeed of all Spain, appears to be a fixed species that has undergone very little modification for centuries. The varying degrees of color and different percentages of sugar that distinguish the pulp of fruit grown in different localities in Spain appear to depend almost entirely on soil conditions rather than varieties, and the Valencia watermelon still differs little from similar fruit grown in northern Africa. It does not attain very great size, but has a remarkably thin rind and highly colored meat, and is of superior quality.

"The principal pests from which melons of all kinds suffer here are mildew, scale, and snails. The scale, which is said to belong to the family of the rose scale, is the most difficult to combat successfully, especially when dull, foggy, warm weather conditions favor its rapid propagation. The dry, parching winds that blow at irregular intervals during the summer from the semiarid interior of the country effectively arrest the progress of this scale and if continued two or three days will exterminate it altogether. Snails are dealt with in a very practical and economic way by turning flocks of ducklings into the melon plantations affected."

33275 to 33277. CUCUMIS MELO L.

Muskmelon.

33275. "*Bronceado*. This melon is oval or slightly conical in shape, with very thick meat and small seed cavity."

33276. "*Negro*. This melon is of a very dark unchanging-green color, of an elongated oval or cylindrical shape and unusually large, weighing 9 to 16 pounds."

33277. "*Bronceado* and *Negro* seed mixed."

"These are the genuine winter melons of this zone, they are by far the best varieties and receive the greatest care in selection and cultivation. Both at their best are wonderfully fine, and probably nothing superior of their kind can be produced in any part of the world.

"The fame of the fine winter melons grown in this district, of which 12,000 to 15,000 tons are exported annually, has extended over the

33272 to 33277—Continued.**33275 to 33277—Continued.**

greater part of Europe. Small shipments have been made in recent years to New York and Boston, but the total lack of cold-storage facilities in ships visiting this coast and the consequent very large percentage of deterioration in transportation has generally rendered such experiments unprofitable.

"The Valencia system of melon raising requires seed beds and transplanting. The seeds are planted in the former in clusters of five or six on a layer of animal manure wrought into a thick paste with the addition of water, each cluster being deposited in slight depressions in the surface about 8 or 9 inches apart. The bed is then covered with a light sprinkling of dry, pulverized manure which is kept moist by occasional spraying with water. Transplanting takes place when the two lateral branches of the plant are thrown out and the tip of the central growth is just appearing. The more delicate plants are discarded and only the healthiest and most vigorous utilized.

"In preparing the soil for transplanting, the desired porousness is attained here by mixing with it the sea sand used as hog bedding, to which is added fertilizer in the proportion of 1 sack of ammonia sulphate, the favorite nitrogenous fertilizer in this region, to 10 sacks of the sand bedding. The rows are separated from 6 to 7 feet, and the distance between each plant is 30 to 36 inches. Irrigation in the absence of rain is given at 8-day intervals.

"In the Alicante district, a little to the south of this, the seed are planted definitely in the open in pits about a yard apart in which organic manure has been mixed with the soil.

"It is very difficult to obtain selected melon seed true to variety on the open market in this country. Each farmer reserves his own seed by a very practical method of selection, as only the seeds of fruit distinguished at the family table by its sweetness, flavor, and thickness of pulp are set apart for future planting or exchange with neighboring farmers. This process of selection continued through a succession of years appears to be remarkably successful, attaining such uniformity and high quality of product that it is not unusual to find a whole plantation without a single flavorless specimen among its crop. The smallness of Valencia farms, however, occasionally proves an obstacle in selecting and preserving the purity of varieties, as the proximity of inferior stock may easily nullify the care and labor of the most intelligent farmer in melon raising.

"Winter melons are harvested in the early fall and are suspended in loops of esparto cordage from nails in the beams of roofs and lofts, where they keep with but little deterioration for six months or more."

33278. CLEMATIS sp.

From Tangier, Morocco. Procured by Mr. Walter T. Swingle, of the Bureau of Plant Industry, from Mr. T. Goffart, of Tangier. Received March 25, 1912.

"Seeds of an interesting species growing abundantly in Mr. Goffart's garden. I think it would be interesting for trial in Florida and California and perhaps with protection even as far north as Washington." (*Swingle.*)

BOTANICAL NOTES AND PUBLICATION OF NEW NAMES.

32399. *CHAETOCHELOA COSTATA* (Roxb.) Skeels.
32430. *RYTILIX GRANULARIS* (L.) Skeels.
32435. *MNESITHEA EXALTATA* (L.) Skeels.
32609. *VIGNA CYLINDRICA* (Stickman) Skeels.
32613. *SYNTHERISMA CONSANGUINEA* (Gaud.) Skeels.
32795. *CALLISTEMON CITRINA* (Curtis) Skeels.
32924. *CAJUPUTI CUTICULARIS* (Labill.) Skeels.
32928. *CAJUPUTI PULCHELLA* (R. Brown) Skeels.
32929. *CAJUPUTI WILSONI* (Mueller) Skeels.
32968. *TECOMA PANDORANA* (Andrews) Skeels.
32970, in note. *TRITOMA MACOWANI* (Baker) Skeels.
32971. *TRITOMA NATALENSIS* (Baker) Skeels.
32972. *TRITOMA NELSONI* (Masters) Skeels.
33061. *SOPHORA DAVIDI* (Franchet) Skeels.
33199. *ROSA CINNAMOMEA MALYI* (Kern) Skeels.
33236. *CORCULUM LEPTOPUS* (Hook. and Arn.) Stuntz.

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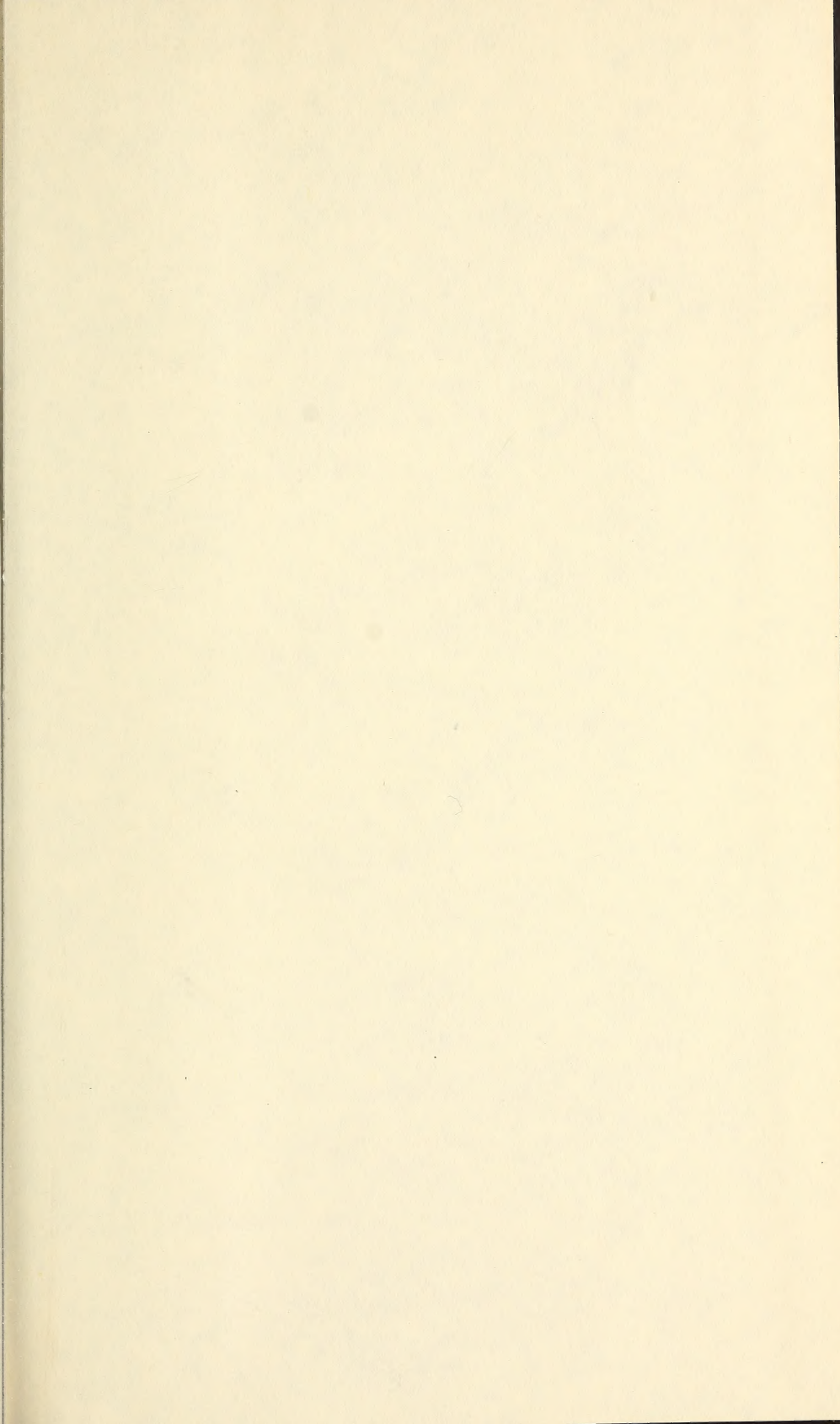
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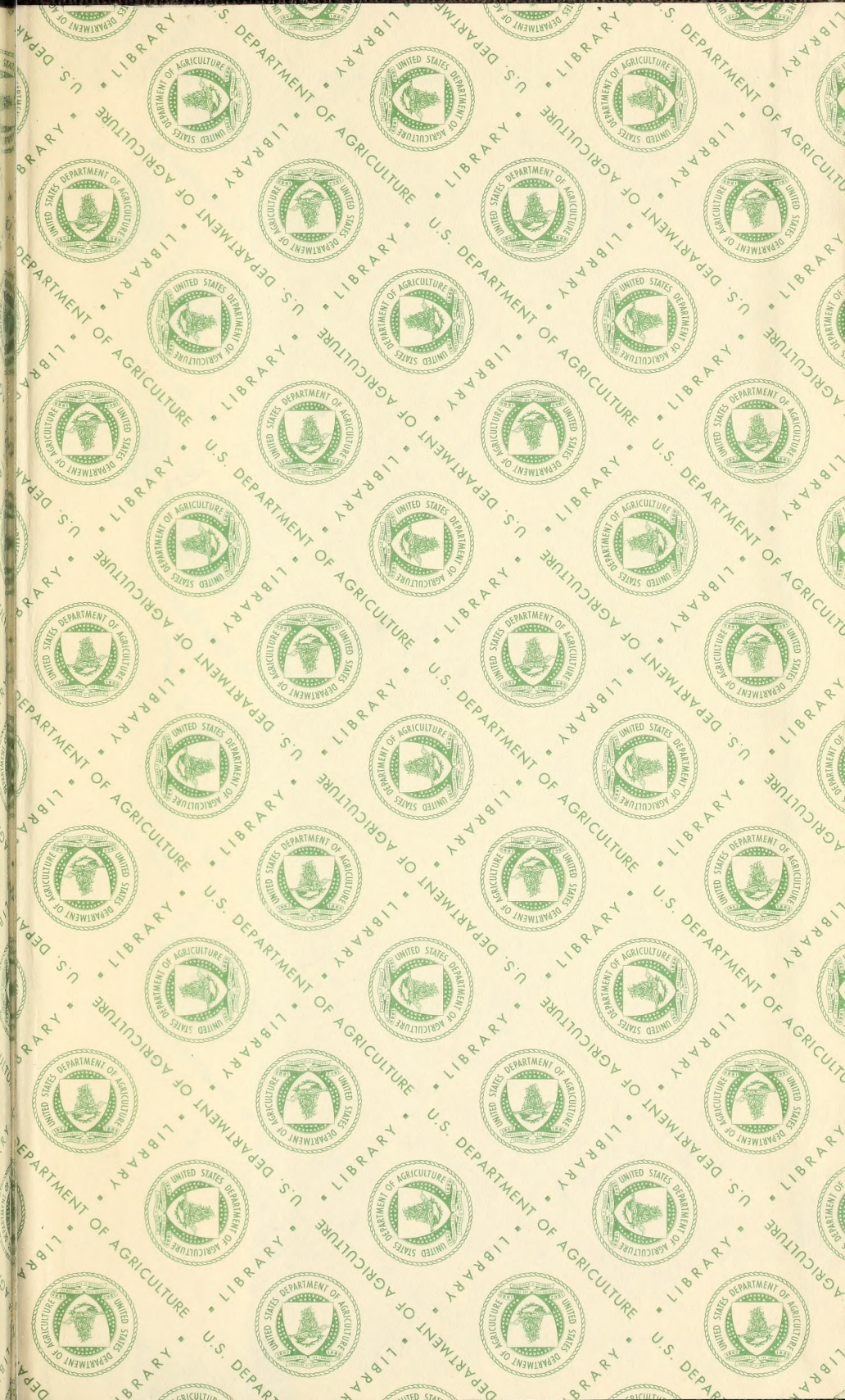
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